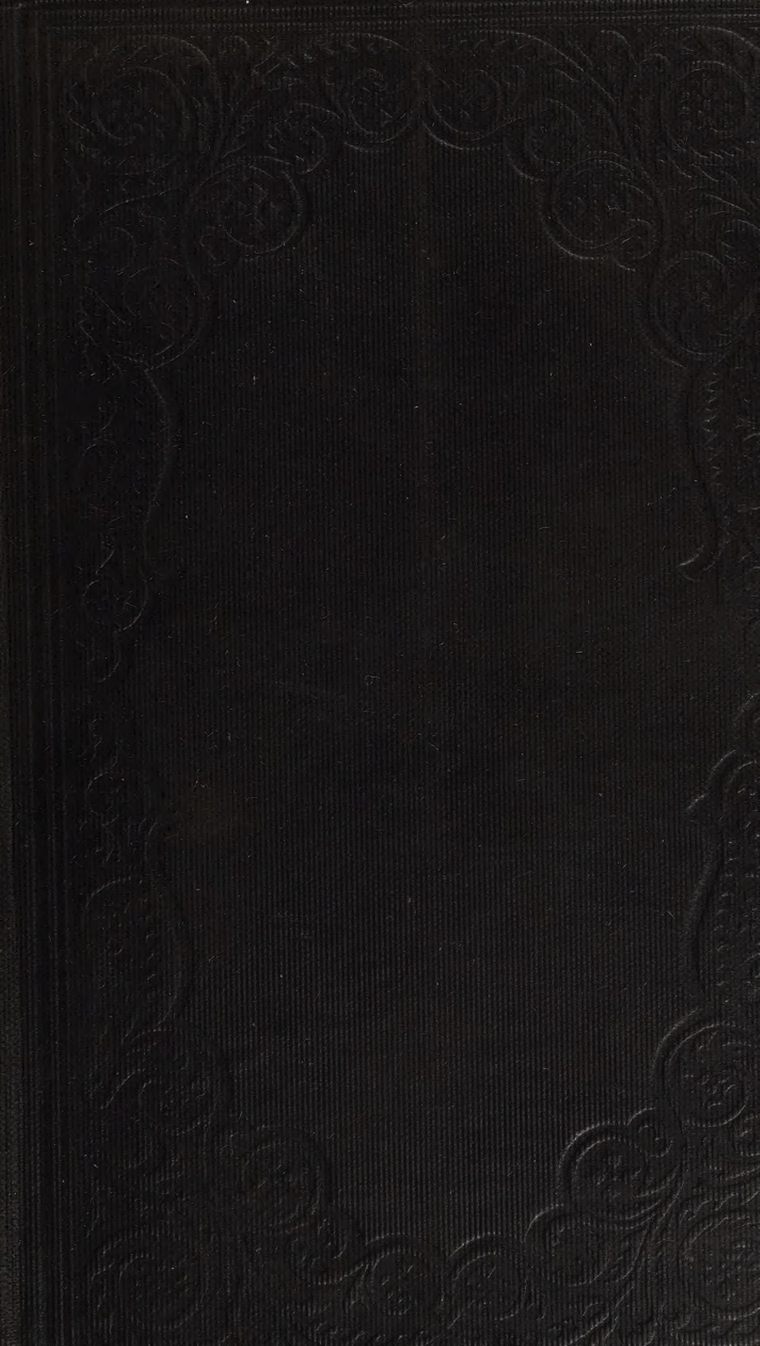

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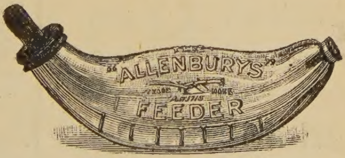

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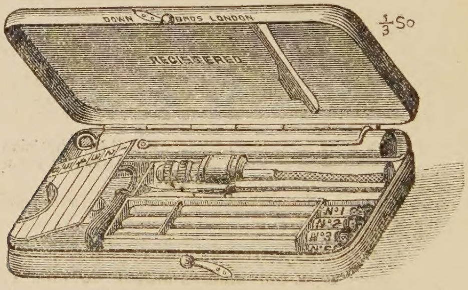

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CONSULTING OBSTETRIC PHYSICIAN AND SURGEON TO THE LEEDS GENERAL INFIRMARY,
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# Synopsis.

Abstracts and other Short Articles from the Medical Journals, showing the most important indications of Treatment, published by different writers during the half year.

ARRANGED ALPHABETICALLY.

## GENERAL MEDICINE AND THERAPEUTICS.

### ADDISON'S DISEASE, PIGMENTATION OF THE MOUTH IN.

At a meeting of the Dermatological Society of London, held July 12, Dr. Colcott Fox exhibited a patient, aged 40 years, with a remarkable pigmentation of the mouth, which had been developing for four years. The lips, gums, and mucous membrane of the cheeks were dotted with very dark, brownish-black, rounded pigment macules, mostly nearly the size of a split pea. They developed without subjective sensations. The man was apparently in perfect health, and had a good family and personal history. There was not the slightest suspicion of any adrenal disease, or carcinoma. Dr. Stephen Mackenzie remarked that, in spite of the good health which this patient now enjoyed, he could strongly suspect an early stage of Addison's disease. On more than one occasion he had been enabled to foretell the onset of this affection, while the patient was in good health, by the pigmentation of the buccal mucous membrane. (Medical Age, October 10, 1899.)

### ALKALOIDS, INCOMPATIBILITIES OF.

In view of the highly poisonous properties of some alkaloids their incompatibilities deserve careful study. (*a*) Nearly all alkaloids in the *free state* are sparingly soluble in water (Rule 1), and they do not readily form carbonates. Hence their salts should not be prescribed along with alkaline carbonates or hydroxides; *e.g.* acetate of morphine with bi-carbonate of sodium or potassium; or Liq. strychn. with Sp. ammon. aromat. Even borax partially precipitates morphine and codein. If arsenic and strychnine are combined, use Liq. arsen. hydrochlor. (*b*) Most alkaloids are precipitated by—(i) Tannic acid (not easily by gallic acid). Acetate and meconate of morphine are precipitated by tannic acid, but not the hydrochlorate or sulphate. (ii) Tincture of iodine, *i.e.* I + KI. Iodide of potassium alone precipitates some alkaloids from strong solutions. (iii) Double iodides, *e.g.* Donovan's solution (Liq. arsen. et hydr. iod.); Mayer's reagent (potassio-mercuric iodide,); Caffein and theobromin are not thus precipitated. (iv) Picric acid. This furnishes a convenient test for quinine in the urine. The precipitate is distinguished from albumin by its complete solution when heated, and reprecipitation upon cooling. (*c*) Caustic alkalies decompose the solanaceous alkaloids (atropin: hyoscyamin) and impair or destroy their therapeutic efficacy. A common error, and one of long standing, is the combination of Liq. potassæ with Tinct. or Succus hyoscyami. (*d*) Many other salts of alkaloids are sparingly soluble, *e.g.*, quinine acetate, benzoate, borate, citrate, hydriodide and hydrobromide. (*e*) Most of the incompatibilities of alkaloids can be overcome or prevented by dilute HCl, or by alcohol in the proportion of 12 to 40 per cent. of the solution, because alkaloidal salts are usually soluble in alcohol. In view of the above statements the practical rule emerges:—*All poisonous alkaloids should, so far as possible, be prescribed in simple solution, and not in too concentrated a state.* (From Dr. Walter G. Smith's paper in the Practitioner, December, **1899.)**

## ANTIPYRESIS IN THE FEBRILE DISORDERS OF INFANCY.

Dr. A. Jacobi said that some physicians object to antipyretic altogether on the ground that higher temperatures, in the infectious diseases chiefly, were necessary for the formation of antitoxins. But it should be remembered that the typhoid fever bacilli outlived their toxin, and possibly also their antitoxin. The mortality rises with the height and persistence of the high temperature. Pneumonias and typhoids, with fair remissions, permitted of fair prognoses. Relapsing fevers of long duration and very high temperature had a mortality of only 2 or 3 per cent. because of the long remissions. The multiplicity of the causes of fever proved its nature—it was not an entity, but a symptom. Its treatment should not be governed by iron-clad rules. A temperature which might be dangerous to one individual was of little importance to another; moreover, a temperature which might be easily and safely borne at the beginning of an illness might prove very harmful in the later stages of the same disease. The treatment of the symptom, fever, gave us no hope of shortening the disease, of which it formed a part. On the other hand, we could add materially to the patient's comfort, and at the same time not at all interfere with the healing process. To allow a high temperature to deteriorate tissues and exhaust the brain was as injudicious as was the custom of emphasising the number of degrees of Fahrenheit as the only important part of a morbid process. Protracted fevers interfered seriously with nutrition, and on this account became more serious in proportion to the youth of the individual. He believed more infants and children died of the slow results of protracted high temperature—what was called convalescence—than were destroyed during the active stage of the disease. An acute anæmia was more easily overcome than a chronic one. To the latter class belonged those associated with, or following diseases attended with high fever and starvation. The younger the animal or person, the sooner would it succumb to starvation. The blood of the child was less in quantity, relatively, and had less fibrin and less salts, and contained more leucocytes than in later life. Most of our antipyretics were at the same time diaphoretics and analgesics, and hence were often powerful adjuvants to baths and other treatment, or were useful substitutes for baths when the latter were distinctly contraindicated. (Pediatrics, November, 1899, p. 459.)

## ANTIPYRIN ERUPTION.

Antipyrin is a well-known cause of generalised eruptions, and of late years a great number of observations have been placed on record in which this drug has given rise to localised eruptions. Certainly, amongst the most curious are the three cases lately mentioned by Professor Fournier (*Ann. de Derm. et de Syph.*, t. x., No. 4, April, 1899). The subjects of this eruption were greatly alarmed at the onset of what they feared was commencing gangrene of the penis. The eruption consists of a series of dark taches, sometimes set in an œdematous skin. In one case it was the first dose of antipyrin taken, and the eruption evolved four and a half hours later. In another case the patient frequently took antipyrin for migraine, but without previous accident. (Treatment, June 22, 1899.)

## ANTISEPTICS IN PÆDIATRIC PRACTICE.

In the Section of Diseases of Children at the annual meeting of the American Medical Association (*Phil. Med. Journ.*, July 1) Gustavus M. Blech (Chicago) divided these agents in : (1) those acting on the respiratory tract ; (2) those affecting the gastro-intestinal tract ; (3) those influencing the urinary apparatus, and (4) those acting on the organism as a whole. Guaiacol carbonate, he said, was a nearly tasteless and non-irritating antiseptic of much service in cases of chronic bronchitis. Nasophen had been proved to be harmless, and antinosin in a 2·5 per cent. solution was non-irritating, and was a most useful disinfectant and detergent wash for the nasal passages. Eudoxin had proved in his hands a very valuable remedy in diarrhœa. It was split up by the action of the gastric juice, the nasophen passing on unaltered. In two cases of typhoid fever treated with eudoxin the stools had been rendered sterile in about three days. Slagle thought that there were only three internal antiseptics possessing much value, namely, calomel, sulphur, and soda sulphite. Cotton said he could not overcome his prejudice in favour of calomel as an intestinal antiseptic, but he had found eudoxin useful, and intended to give it a more extensive trial. He used guaiacol both locally and internally, and liked its action. (Epitome, British Medical Journal, July 15, 1899.)

## APOMORPHINE.

Dr. E. L. Abogado (*Cronica Medica Mexicana*, 1899, No 9, p. 248) recommends this, when given hypodermatically, as an excellent emetic. For accumulations of mucus in the respiratory passages or in the chronic catarrhs it facilitates expectoration. It is useful to relieve the dry cough of tuberculosis. Dominguez recommends its use in cerebral congestion when it is desirable to empty the stomach quickly, and for patients suffering from digestive disturbances to tone up the organs. (American Journal of Medical Sciences, 1899, p. 230.)

## ASPARAGUS AS A DIURETIC.

Dr. H. A. Hare first relates a case in a man, aged 35 years, who was suffering from cirrhosis of the liver with swellings of the ankles and legs, and secondary gastric disorder with nausea. Here the fluid extract of asparagus had a marked diuretic action. He then proceeds: In another case under observation a shorter time, the condition being one of disordered digestion and marked œdema of the legs resulting from a double mitral lesion, and in which only twenty to twenty-five ounces of urine were passed in twenty-four hours, the use of digitalis with bitartrate of potassium failed to produce any diuretic influence. The bitartrate was then replaced with infusion of juniper berries and acetate of potassium, a pint a day, without effect. Fluid extract of asparagus was then given, and the urine in the course of three days rose from twenty-seven to forty ounces, and remained at thirty-five to forty ounces while the drug was continued. In a case of advanced atheroma with aortitis and probably fatty heart, no marked effect was produced by the asparagus. (Therapeutic Gazette, September 15, 1899.)

## ASPIRIN.

Witthauer (*Die Heilkunde*, April, 1899) calls attention to the great advantages possessed by aspirin over other preparations of salicylic acid. In the stomach it is practically unchanged, while in the intestine nascent salicylic acid is separated. Through this property it can be given without deranging the stomach, even to patients who have shown absolute intolerance to salicylate of sodium. Ringing in the ears is hardly ever observed with aspirin. It is best given in doses of 15 grs. mixed with 45 grs. of pounded sugar in a spoonful of water, and as much as 75 grs. can be taken in twenty-four hours. Its taste is much less unpleasant than salicylate of sodium. The clinical results in all diseases where salicylates are indicated are at least equal, and sometimes superior, to those obtained by salicylate of sodium. In gout its superiority is certain. (From abstract in Epitome, British Medical Journal, October 21, 1899.)

## CHLOROSIS.—Iron in.

The favourite forms of giving iron are as Blaud's mass, sulphate of iron in Startin's mixture (Clark's), lactate of iron (Quincke), Liq. ferri sesquichlorid G.P. (Israel), tinct. ferri chlorid (Nothnagel), proto-oxylate of iron (Hayem), to which may be added the long list of officinal combinations of iron with the vegetable acids, and the non-officinal albuminates, peptonates, and preparation of hæmoglobin and the nucleo-albumens. In general it is safe to say that the best guide to the choice of a preparation of iron is the condition of the stomach. Townsend, in several groups of cases treated by different methods, secured the most rapid increase of hæmoglobin when beta naphthol, grains 2 were given with 5 of Blaud's mass, thrice daily, thus securing intestinal antisepsis. Forchheimer selected solol and hydronaphthol as the most efficient antiseptics, giving them in 5-grain doses with iron. The hypodermatic administration of iron which has been used considerably upon the Continent has met with little favour here on account of the pain and irritation caused by most preparations. Da Costa, however, claims to have eliminated this by the use of 15-minim doses of a twenty per cent. solution of the unofficinal ferri et mangani citras. (From Dr. Southworth's paper, Medical News, October 14, 1899.)

## CHOREA.—Hyoscine Hydrobromate in.

Hyoscine hydrobromate has been tried by A. C. Rendle, of Madras, India (*British Medical Journal.* No. 2013, 1899), on a bad case of chorea in a youth of sixteen years. He was thin and anæmic; the temperature was slightly raised; the tongue was dry and coated with a brownish fur; the pulse was weak and the respirations irregular; there were constant involuntary movements and twitchings of all parts of the body. He had sores on various parts of his body, due to injuries inflicted from his involuntary movements. Albumin was present in his urine. Potassium bromide, chloral hydrate, and increasing doses of arsenic gave no relief. He was very restless at night, and morphine eased him slightly. Hyoscine hydrobromate in doses of $\frac{1}{200}$ of a grain was injected hypodermically twice a day. On the day following the first injection there was marked improvement in the choreal movements. The dose was increased to $\frac{1}{100}$ of a grain and given three times a day. In a week the movements had almost entirely ceased. The hydrobromate was then discontinued and the arsenic treatment resumed. The patient made an excellent recovery. Chorea is an extremely fatal disease in India. (Medical Age, October 25, 1899.)

## DIABETES INSIPIDUS.

Diabetes insipidus is apparently a very rare affection—its etiology varied, little known of its pathology, its treatment unsatisfactory, and its course uncertain ; sometimes influenced by treatment, and even cured ; at other times persisting for a number of years, without any visible deterioration of health beyond a feeling of weakness and general malaise ; and sometimes running an acute course, terminating fatally in a few months ; and sometimes the affection disappears of its own accord untreated. Its origin is evidently nervous, and is supposed to result from a want of inhibitory control of the vaso-motor renal nerves. Injury to the nervous system, such as a fall or knock on the head, a violent emotion, such as fright or a sunstroke, is its not infrequent antecedent. Tumours of the brain, the lesions chiefly about the neighbourhood of the fourth ventricle, have been met with in several cases, and it will be remembered in one of Bernard's famous experiments on animals puncture of a certain spot in the floor of the fourth ventricle near that region, injury of which causes glycosuria, produced polyuria. The most reasonable view, as expressed by Osler, is—that it results from a vaso-motor disturbance of the renal vessels, due either to (1) local irritation, as in a case of abdominal tumours ; or to (2) central disturbance, in the case of brain lesions ; or to (3) functional irritation of the centre in the medulla ; giving rise to a continual renal congestion. Clinically it may be divided into five forms—(*a*) That in which the aqueous superflux is most marked—called hydruria (by Willis). (*b*) Cases attended with a copious discharge of urine with a deficiency of urea—anazoturia. (*c*) Cases accompanied by a superabundance of urea—azoturia. (*d*) A form described by Tessier as phosphaturia, or phosphatic diabetes, which he distinguished from azoturia. This form is associated with certain dyspeptic conditions, and is characterised by a considerable increase in the excretion of phosphoric acid in the urine, while the urea is not increased in amount. (*e*) And lastly, a form described by Dr. Fuller, and called by him baruria, which is characterised by a general increase throughout of the solid urinary constituents, whilst the aqueous secretion remains tolerably constant. (From Dr. J. Lumsden's paper in the Dublin Journal of Medical Science, July, 1899.)

### DIABETIC COMA.—Sodium Bicarbonate in.

R. Lepine has recorded two cases of imminent diabetic coma, in which the attack was prevented by the intravenous injection of a solution of sodium bicarbonate (*Lyon méd.*, 1899). In the one case 300 grs. were administered with success. In the other the patient was very feeble, and was passing about 5 quarts urine daily, containing about 375 grs. urea, and between 4,000 and 5,000 grs. sugar. The urine gave a deep red coloration on the addition of iron perchloride solution, and in view of this he was subjected to pronounced alkaline treatment—900 grs. sodium citrate and 180 grs. sodium bicarbonate daily, with a large amount of leguminous vegetables. As he was threatened with coma, two quarts of sterilised water, containing 300 grs. sodium bicarbonate, were injected into a vein. Six quarts of urine were passed in the next twenty-four hours, and the general condition improved greatly ; the sugar increased in amount, but remained acid. The first effect seems to have been a great increase in the elimination of salts, of $\beta$-oxybutyric acid, and of acetone. (Edinburgh Medical Journal, September, 1899).

### Diabetic Coma.—The Treatment of.

Dr. Ludwig Herzog (*Berl. klin. Woch.*, 1899, No. 14, S. 295) believes that before the actual onset of coma, but in the presence of severe symptoms, sodium bicarbonate, in from one hundred and fifty to six hundred grains daily, is indicated. If urgent treatment is required in developed coma the subcutaneous infusion of physiological saline, or 3 to 5 per cent. of sodium bicarbonate, even a stronger combined solution, should be frequently repeated. The unpleasant symptoms observed from the use of sodium bicarbonate are diarrhœa, palpitation, and even bloody urine. (American Journal of Medical Sciences, 1899, p. 230.)

### DIONIN.

Dr. J. Korte (*Therapeutische Monatshefte*, 1899, Heft 1), gives the clinical name of this substance as ethyl-morphine hydrochloride, and its formula $C_{19}H_{22}NO_3HCl + H_2O$. It occurs as colourless crystalline powder, of markedly bitter taste, and readily soluble in water and alcohol. Twelve patients suffering from pulmonary tuberculosis received this remedy in half-grain doses at bedtime. The pharyngeal irritation was relieved, and restful sleep followed without night-sweating or other unpleasant symptoms. In some instances one-sixth of a grain seemed sufficient. Other symptoms, as cough, chest pains, and muscular soreness, were also benefited. Six patients suffered from chronic bronchitis and pulmonary emphysema. In general, the asthmatic attacks were relieved, the dyspnœa improved, and the cough and pains were benefited. As an analgesic and hypnotic eight observations are recorded. The conditions were various—hypostatic pneumonia, polyarticular rheumatism, inoperable uterine carcinoma, gastric and hepatic carcinoma (two instances), chronic parametritis, panaritium, and chronic gastric ulcer. In these the analgesic properties seemed established, and insomnia, so far as it was caused by pain, was benefited. Its field of use includes the irritation-cough of early pulmonary tuberculosis, that of chronic bronchitis, emphysema, and so-called bronchial asthma. As an analgesic it is not so trustworthy as morphine. It may be administered dissolved in distilled water or syrup, and made into pills with proper excipient. (American Journal of Medical Sciences, July, 1899).

## DIONIN IN MORPHINOMANIA.

According to the *Presse médicale* for May 20, Professor von Mering lauds dionin as being of great service in the treatment of morphinomania. The following formulæ are given : ℞ Dionin, 4½ grains ; distilled water, 300 grains. M. Fifteen drops to be taken two or three times daily in a little sugar water. Or ℞ Dionin, 4½ grains ; extract of licorice, sufficient to make thirty pilules. M. From one to three pills to be taken at bedtime. For hypodermic injection the following formula is recommended : ℞ Dionin, 1½ grain ; distilled water, 160 minims. M. From one to three injections of sixteen minims each may be administered in the twenty-four hours. (New York Medical Journal, June 24, 1899.)

## DIPHTHERIA.

Dr. Gordon Sharp read before the Leeds and West Riding Medico-Chirurgical Society, notes on an epidemic of diphtheria. The cases recorded numbered 25, with 2 deaths (ages 7 and 19). A fair proportion of the cases were confirmed bacteriologically. Six suffered from after-paralysis. Two cases were ushered in by a convulsive seizure (ages 2 and 3). Four had severe bleeding from the nose. Two had severe laryngeal symptoms, and recovered without operation (ages 4 and 10). The nose suffered in many cases. Insanitary surroundings had nothing to do with the spread of the disease ; it appeared to be spread by school children. New property might have had something to do with the rise of the disease, for perhaps a larger proportion of the cases arose therein than in the old property. The district of Leeds in which most of the cases occurred had more of the character of the country than the town. Geologically the soil was made up of 2 to 4 feet of sand, and below 3 to 12 feet of a permeable clay, and below that again sandy rock. The epidemic started in the end of January, 1899, with a lull till June, when it started afresh, and was most severe from July till the end of September. Simple sore throats were during the period particularly prevalent. Scarlet fever did not prevail. Diarrhœa was not observed in epidemic form in the period covered by the diphtheria epidemic. It was mentioned that diphtheria was not common in Leeds till 1896, when there were 136 cases with 50 deaths. In 1897 there were 210 cases, with 74 deaths; in 1898 there were 891 cases, with 229 deaths; while in the first three quarters of 1899 the cases were 1,234, with 230 deaths. These included membranous croup. The death-rates were progressively smaller as the years went on, being 36·7, 35·2, 25·7, and 18·6 respectively. The high recovery-rate in the present epidemic was accounted for on the grounds of favourable accidental circumstances. (British Medical Journal, Nov. 18, 1899.)

## Diphtheria and Antitoxin.

In the *New York Medical Journal* of July 23, 1898, Moriarta gives the following conclusions:—(*a*) Diphtheria antitoxin *per se* is harmless. (*b*) Diphtheria antitoxin is practically a specific in diphtheria. (*c*) Diphtheria antitoxin is the rational treatment for diphtheria. (*d*) Diphtheria antitoxin must be used early. (*e*) Diphtheria antitoxin must be used in full dose. (*f*) It is necessary to have a reliable product. (*g*) Intubation is an essential associate of antitoxin in laryngeal cases. (*h*) There is no case so far advanced that antitoxin should not be used. (*i*) We should not wait for the report of the bacteriologist, but use it promptly on clinical grounds. (*j*) It must not be the last resort, nor can it be of much service in small doses. (Treatment, July 13, 1899.)

## Diphtheria and Membranous Rhinitis.

It appears probable: (1) That membranous rhinitis (this term being understood not to include primary nasal diphtheria) is commoner than is usually supposed, cases being overlooked owing to the mild constitutional symptoms, or regarded as catarrhal rhinitis, &c. (2) That the disease may occur in one of two forms, which concur in the local appearances, the prolonged course and the mildness or absence of constitutional symptoms, but differ in the presence or absence of the Klebs-Löffler bacillus, and in their power of infection. (3) That the form associated with the Klebs-Löffler bacillus is considerably more common than the simple form, and is a mild, local manifestation of diphtheria, differing sharply, however, from the usual form of primary nasal diphtheria. (4) That, inasmuch as the two forms of membranous rhinitis are clinically indistinguishable, a bacteriological examination should be practised in every case, and isolation of the patient carried out, at least until the result of the examination is made known. (From Dr. E. S. Yonge's paper in the Practitioner, December, 1899.)

### Diphtheria Bacilli in the Air of a Diphtheria Ward.

H. Richardière and L. Tollèmer (*Gazette des Maladies Infantiles*, 1899, No. 10) have made an interesting series of experiments to discover whether bacilli were present in the air of apartments devoted exclusively to the treatment of diphtheria patients before and after disinfection had been practised. These observations were made in the Bretonneau pavilion of the Hospital Trousseau. In the first series of experiments the wards had not been disinfected for several weeks. They contained about thirteen diphtheria cases. Two procedures were adopted: in the first the air of the rooms was driven over sterilised bouillon; in the second, Petri dishes containing coagulated beef serum were exposed to the air for varying periods of time. Bacteriological tests were controlled by inoculation of animals. Similar experiments were also made in apartments which had been occupied by diphtheria patients, but had subsequently been disinfected. The result of these observations showed that virulent diphtheria bacilli were present in the dust floating in the air of the Pavilion Bretonneau, which had not been disinfected for a long time, but that they were absent after disinfection. These experiments, therefore, show the importance of frequent disinfection of wards devoted to contagious cases and the necessity for the precautions of rigid isolation which are carried out in these wards at the present time. They show, also, that it is necessary to employ daily some means of removing, without at the same time stirring up, the dust of such apartments. (American Journal Medical Sciences, October, 1899.)

### Diphtheria, Serum Treatment of, and Paralysis.

Dr. Woollacott thus concludes his paper:—The influence of antitoxin on diphtheritic paralysis may be summarised as follows. Up to the present the percentage of paralysis has increased on the whole. There is some evidence that large doses—*i.e.*, not less than 4000 units—of antitoxin are more effective than small ones both in preventing paralysis and in diminishing the mortality due to it. The earlier antitoxin is given in diphtheria the less likely is paralysis to follow. Should it occur after early injection it will probably be mild and of comparatively short duration. The type of paralysis has, on the whole, become less severe or, at all events, less dangerous to life. Finally, diphtheritic paralysis has become more prone to attack the young. This change in age incidence has possibly made some minor differences in the relative frequency with which the various forms of paralysis are observed. The practical conclusion is that the full value of antitoxin is only obtained by using it early and in efficient doses. If this be done not only is life saved but tedious complications are prevented or at least deprived of their dangerous characters. (Lancet, August 26, 1899.)

### Diphtheria.—Tracheotomy and Serum Treatment.

(From Dr. G. Thornton's paper). As showing the influence of the serum treatment in staying the spread of the disease I may give the days since admission on which the operation was performed. In 119 cases it was performed on the day of admission, in 25 cases the day after, in six cases two days after, and in one case three days after. Before the days of antitoxin it was far more frequent to have to perform tracheotomy two, three, or four days after admission. It has been pointed out how much more likely is the serum to be beneficial the earlier it is given in cases of diphtheria, and so also, as might be expected, our figures show the same advantage of the early administration in cases of tracheotomy. Injection on the second day of disease gave 21 cases with two deaths, on the third day 47 cases with 16 deaths, and on the fourth and subsequent days 83 cases with 31 deaths. The late cases are usually severe faucial cases where the disease has spread to the larynx, whilst the earlier cases are those in which the larynx is first, or at any rate early, involved, the urgency of the symptoms causing early removal to the hospital. The proper dosage of the serum is not at all settled as yet. Fortunately there is no mistake possible in this respect except in the giving of too small a dose. Personally, I think that for an ordinary case, with little on the fauces and nothing in the trachea, one dose of 4000 units is sufficient. In a case with a moderate affection of the fauces I should repeat the dose next day. Where the fauces are extensively involved and where there is exudation in the trachea and bronchi larger doses are advisable—say, three doses of 8000 units at intervals of 12 hours. It must be understood that these doses are given as a result of my own experience only. Other medical men in these hospitals give different doses. Usually the difference is in giving larger doses. Although I firmly believe no harm to be ever done by large doses of from 40,000 to 80,000 units, yet just as firmly do I believe that the moderate doses recommended are equally efficacious. (Lancet, July 8, 1899.)

## ERYSIPELAS AND ICHTHYOL.

A *confrere* publishes a series of 250 cases of erysipelas treated exclusively by him with ichthyol ; the patients belonged to all grades of all society, and their ages varied from six months to eighty-seven years. After having cleaned the surface with a plug of cotton wool wet with alcohol, he applies with the fingers an ointment of vaseline and ichthyol (13 to 30 per cent.) The treatment is renewed every four or six hours. Recovery was in every case rapid. (Medical Press and Circular, November 8, 1899.)

## FEVER AND ITS TREATMENT.

Hare (*International Medical Magazine*, August, 1899) combats the idea that fever is necessarily a harmful process. His propositions are : (1) That fever when excessive or prolonged is harmful. (2) That moderate fever, not too prolonged, may be of distinct advantage to the patient. (3) That moderate fever, not too prolonged, if it is not advantageous may be, on the other hand, not deleterious, but may be regarded by the physician without any anxiety, as a characteristic concomitant symptom, which we would naturally expect to find in a patient suffering from the disease which is present in the patient's system. Fever is a condition developed in all healthy animals as soon as they undertake to resist infection, and he does not, therefore, consider it a useless coincidence. He would therefore not employ antipyretic drugs to combat fever, since, as a rule, they interfere with the protective action of elimination of poison, the development of antitoxins, and the stimulating and supporting fever. The cold bath, on the other hand, while relieving the fever if it is excessive, in no way modifies these protective efforts. (Journal of American Medical Association, September 2, 1899.)

## FORMALIN.

As a general rule, Formalin—in various strengths—can be employed with advantage in all cases and conditions in which the cresols, carbolic acid, corrosive sublimate, &c., have hitherto been so largely used ; and we consider that its great advantages in the treatment of suppuration over these preparations have been somewhat overlooked. Its application in ringworm has been recommended as follows :—To small circumscribed patches the 40 per cent. solution should be applied, one or two applications usually being found sufficient. Over large areas a 4 per cent. solution should be rubbed nightly for a week. Many observers, including Malcolm Morris, although granting the efficacy of formalin in these cases, object to its employment owing to the irritation it causes. In other parasitic affections we cannot speak much of its value, excepting in cases of pruritus vulvæ, where a spray of 4 per cent. has been found at times to give relief. In gynæological work the application of a 10 per cent. solution is recommended in ulcerated os uteri, its action being much less circumscribed than that of nitric acid, and hence inflammation of the surrounding tissues is less apt to occur. It is spoken highly of by Saret, Von Winckel, of Munich, and others, as a vaginal douche in cases of gonorrhœa, gonorrhœal vaginitis, and endometritis. In these cases a tablespoonful of a 10 per cent. solution should be added to a quart of lukewarm water. (British Physician, October 16, 1899.)

## GOUT.—Treatment of.

Treatment should have for its aim the following objects :—(1) In cases of acute gout the gouty paroxysm must be treated, and the severe pain must be relieved. This can be effected by the free administration of colchicum and potassium citrate, and by a mild blue pill and Epsom salts purge. The painful joint or joints should be packed with wool saturated with a warm alkaline and anodyne lotion. (2) The elimination of uric acid should be promoted. For this purpose free diuresis should be encouraged by the administration of plenty of water, and by the employment of potassium citrate, or potassium bicarbonate, or similar salts which exercise a diuretic effect, and which at the same time diminish the acidity of the urine. For the same purpose green vegetable food should be freely taken. (3) The excessive formation of uric acid should be checked. This object is mainly attained by a carefully selected dietary. When once the acute attack of gout has subsided, there is no necessity to exclude butcher's meat from the dietary of the gouty. On the contrary, it is better for most patients that it should be moderately partaken of. Although a mixed diet is best suited to gouty patients, yet it is important that the dietary should be a simple one, and it is especially desirable to avoid at any one meal much mixing of proteids and carbohydrates. The stomach of a gouty patient, unlike that of a healthy individual, is not well able to digest half-a-dozen different kinds of food at the same time. The metabolism of the liver should also be promoted by the administration of guaiacum, by an occasional mild cholagogue pill, and by keeping the bowels open. (4) Attention should be paid to general hygiene. It is important to insist on suitable exercise being taken as soon as the patient is fit for it. Golf and cycling are two excellent exercises, in moderation, for the gouty. (5) Enlarged joints and other gouty deposits should be treated with a view to the removal of the deposited sodium biurate. This important branch of the treatment of the gouty can be carried out in various ways. Massage and muscular movements increase the flow of lymph in the lymph channels, and so tend to promote removal of uratic deposits, and to increase the metabolism of the joints. This treatment may with great advantage be combined with the passage of the constant current through, and the employment of cataphoresis to, the affected joints and tissues. I have had excellent results in several cases from the employment of such treatment. Baths of various kinds, including the superheated air and radiant heat baths, are most valuable. Suitable treatment at a properly selected spa is also of great benefit. (From Dr. A. P. Luff's paper in The Lancet, November 18, 1899.)

## HYDROPHOBIA AND THE PASTEUR TREATMENT.

The Chicago Pasteur Institute gives a summary of the results of the preventive inoculations against hydrophobia attained since its inauguration, July 2, 1890. During this time 780 patients received the antihydrophobic treatment. Of these 709 were bitten by dogs, 29 by cats, 26 by horses, 7 by skunks, 5 by wolves, 2 by cows, 1 by a calf, 1 by a rat, 1 by a mule, 1 by a pig, and 3 by hydrophobic human beings; 377 persons received severe and multiple lacerated bites on the hands and wrists, 92 on the head and face, 110 on the arms, 173 on the legs and thighs, and 28 on the trunk. Following the rôle of Pasteur, the patients treated have been classified as follows: (1) Persons bitten by animals recognised and ascertained to be rabid by the test experiment made in the laboratory or by the death of other persons or animals bitten by the same animal; of this class 268 were treated. (2) Persons bitten by animals recognised to be rabid by the symptoms of the disease shown during life; of this class 358 were treated. (3) Persons bitten by animals strongly suspected to be rabid; of this class 161 were treated. Only three deaths have been reported, thus giving a mortality of 0·38 per cent. Before the discovery of the Pasteur treatment the mortality was as high as 88 per cent. for the bites of the face, 67 for bites of the hands, and 20 to 30 per cent. for those of the limbs and trunk. All patients tolerated the treatment perfectly well. The treatment consists in hypodermic injections of a specially prepared virus of different gradation of strengths for a period of fifteen, eighteen or twenty-one days, according to the severity of the case. The method used is identical with that used in Paris. (Journal American Medical Association, July 29, 1899.)

## INFECTIOUS DISEASE AND SCHOOL ATTENDANCE.

(From Dr. Lambert Ottt's paper). My practice has been to recommend the return after the following lapse of time: (1) Diphtheria, four weeks from its inception and one week in the open air. (2) Scarlet fever, four weeks from its inception and one week in the open air. (3) Measles, two weeks from its inception and one week in the open air. (4) Whooping-cough, not until every vestige of the cough has disappeared. (5) Smallpox, two months from its inception and one month in the open air. Some physicians have considered this time as too long, and have also undervalued the one week of out-door life. My answer to them has been, "Where is there a better ventilator of body and clothing than a romping out-door life for a convalescent child?" We have not only the improved general tone, but a removal of the contagious element—germ which it undoubtedly is—and a consequent lessened possibility of imparting the contagion to the healthy children with whom they at once come in contact. I hold that these restrictions should be regulated and enfored by special enactment, for when left to the too-eager mother to get her child soon into school again, or the easy-going physician, who too often caters to the whims of his patrons, they will fail of their purpose unless supported in the form of a law. (Journal American Medical Association, July 1, 1899.)

## INFECTIOUS DISEASES IN CHILDREN, THE SPREAD OF.

Vollmar (*Berl. Klin. Woch.*, August 21, 1899) has made an exhaustive study of the above-mentioned subject, and comes to the conclusion that schools are responsible in a large measure for the spread of contagious disease. While admitting that this can never be entirely overcome, he still emphasises the importance of more careful measures in order to limit the spread of contagion as far as possible. Such measures should be in the hands of special sanitary officers. Before a child is allowed to return to school, after recovery from a contagious disease, its person and all of its clothing should be thoroughly disinfected. The schoolrooms should be disinfected at least twice a year, and the floor of the classrooms and corridors should be disinfected every week. It is the duty of physicians and parents to see that the measures determined upon for the prevention of contagion are conscientiously carried out. Parents, teachers, and children ought to be informed of the ways by which contagious disease spreads, and of the most practical means of prevention. All schools should be regularly visited by physicians. (Medical News, September 30, 1899.)

## INFUSION IN GENERAL PRACTICE.

Georgii (*Münch. med. Woch.*, 1899, Nos. 27, 28), who has used subcutaneous infusion of salt solution in many cases, urges its value and practicability not only in hemorrhage, but in various other morbid conditions. It is indicated by acute anæmia, especially in the third stage of labour, but also as a prophylactic in placenta prævia, when it renders narcosis and turning easier; in acute internal hemorrhage from injury to liver or spleen, or from gastric or duodenal ulcers; in the hemorrhage of typhoid, and that due to the abortion or rupture of tubal pregnancy. It is indicated also in all gynæcological and surgical operations on patients who have lost much blood, if further bleeding may be expected, and especially so if arrest of hemorrhage is an essential point in such operation. Its use in recent cholera epidemics is well known in restoring the circulation, supplying warmth, and preventing the drying up of the tissues. In acute and chronic diarrhœa, in the gastro-enteritis acutissima of adults, and the cholera nostras of children, Georgii has found it of great benefit. In marasmus due to chronic intestinal trouble he recommends the addition of 3 per cent. of sugar to the normal salt solution. In cases of intoxication—for example from strychnine—CO, $CO_2$ chlorate of potash, mine and illuminating gas, boric acid, iodoform, nitro-benzol, or carbolic acid, it dilutes the poison in the blood, and promotes elimination, but depletory venesection should precede it, and so also in uræmia and puerperal eclampsia. In phosphorus poisoning turpentine water may be added to the solution. Other means should not be neglected—a low position of the head, hot cloths and bottles and drinks, perhaps artificial respiration; an injection of camphor in ether is a useful preliminary. (From Abstract in Epitome, British Medical Journal, September 30, 1899.)

## INOCULATION, PROTECTIVE, AGAINST THE TEXAS CATTLE FEVER.

In the Proceedings of the Royal Society for May 25, there is an encouraging account by Alexander Edington, M.B., F.R.S.E., director of the Bacteriological Institute, Cape Colony, of certain results of a method of protective inoculation by intravenous injections of defibrinated blood from infected animals. "In May, 1898," he says, "I inoculated ten head of old cattle with blood from an animal which had been inoculated, six months previously, with virulent blood. These cattle were immediately removed from the institute, and later sent to an infected area in company with ten head of young animals which were uninoculated, but, as is commonly known in this colony, are not so liable to death from this disease as are older animals. Of the young stock all have been infected by exposure in the veld, and three have died. Of the older, more susceptible animals not one has shown the slightest signs of illness, and the cows have given birth to healthy calves." (New York Medical Journal, July 8, 1899.)

## LEUKÆMIA, ACUTE SPLENO-MEDULLARY.

Mr. A. Macleod Ross reports a case in a woman aged 27 years in which the disease followed shortly after confinement attended with great loss of blood. He makes the following observations: (1) The term acute appears amply justified by the short duration of the symptoms, as described by the patient, and borne out by the testimony of the husband and mother. Some authors deny the existence of an acute form, and the remainder all insist on its great rarity. Thus Pepper's system refers to the course as slow and chronic, lasting for months or years, and speaks of the acute form as very rare, and death as only occurring in a few weeks exceptionally. Dr. Muir, in Allbutt's System, says the disease is usually very chronic, but may run its course in a few weeks. (2) The blood, seen under the microscope, showed the case to be one of the spleno-medullary, and not of the lymphatic type, and yet all modern writers describe the acute cases as of the lymphatic variety. (3) The spleen, as usual in acute cases, was not much enlarged, but it seems difficult to agree with Muir and Osler that this organ is practically inactive in the production of the excess of leucocytes, and that the hypertrophy is due to a chronic distension of the pulp with leucocytes, followed later by a resulting thickening of the stroma. Were this the case, one would be obliged to credit the spleen with a selective power for the various forms of leucocytes, as the relative proportions of the different kinds of cells found in the spleen in leukæmia do not accurately correspond with those found in the blood. (4) The highest temperature recorded was 99·8° F. This is curious, as the temperature usually rises to from 101° to 103° F. in acute cases. (5) The great rapidity (52) of the respirations recorded on one occasion is very unusual. (6) The complete absence of hemorrhages is noteworthy, if one excepts the probable occurrence of retinal hemorrhages shortly before death. (7) The enormous rate at which emaciation occurred was very astonishing, as four days sufficed to reduce the patient to a condition of mere "skin and bone." (8) Here we have the history of a recent confinement, associated with great loss of blood. If malaria and hæmophilia have any great etiological significance, we may perhaps partly explain the fact that, in leukæmia, about two males are attacked to one female, because (*a*) of the greater exposure of males to the malarial influences, and (*b*) of the most common method of transmission of the hemorrhagic diathesis, viz., from the mother to her sons. (Liverpool Medico-Chirurgical Journal, July, 1899.)

## MALARIA IN CHILDREN.

There is a marked tendency of the disease to suddenly become worse and assume a pernicious character. This phenomenon is always to be dreaded, and is sufficiently characteristic to have attracted the attention of other observers. Lewis Smith appears to be correct in stating that pernicious fever attacks the child much more frequently than the adult. Upon this point he writes as follows: "In New York, where the type of malaria is benign, we have never met with a case of pernicious fever in adult, but we remember of having seen many cases in children, two of them with a fatal issue." The sequence of the phenomena which constitute perniciousness in children resembles very little the corresponding type of disease in adults. Semanas, in Algiers, expressed the opinion that the disparity in this respect would increase inversely with the age of the child. Whenever it happens, then, that the disease becomes pernicious, either because untreated or because the infection is too severe to be overcome, the accidents of the digestive organs are increased; the tongue becomes dry, with thicker and more adherent coating, the edges being red and exfoliated; the thirst becomes insatiable; the lips are dry and held half open. The child frequently executes the movements of mastication and deglutition with resulting augmentation of the dryness of the buccal mucosa; and takes the breast with avidity whenever the mother allows it—it is usually held to be evidence of exaggerated appetite. Almost at the same time the stomach becomes intolerant and the vomiting becomes incoercible, all food and medicines given being immediately rejected, while the degree of tympanites increases. (From Dr. Moncorvo's paper in Pediatrics, August 15, 1899.)

## Malaria.—The Prevention of.

In speaking of Formosan malarial fever, Dr. H. Ishikawa says that in the prevention of malaria it is of first importance to make good drainage and general clearing of soil. Planting of trees and plants, as eucalyptus, pawllownia, helianthus and acorus calamus has been recommended to prevent the prevalence of the disease'

In 1897, Formosan government planted various species of eucalyptus tree in the neighbourhood of the government house, but as the Formosan atmosphere contains a great quantity of humidity in moist seasons (89 per cent. in Taipeh), it is better to plant the trees at some distance from the houses, and not too near them. Generally, the court-yard of large native house has brick-pavement whole over, and no tree planted on, but the flower pots on shelves. Thus it seems that the pavements prevent rainwater penetrating into the soil, and again, they prevent unhealthy air to rise from the earth. In such case, we have no need of trees to dry moist soil. Houses must be built on high and dry places, and the ground must be covered with asphalt, cement, or pebbles. Floors must be high. Supplies of sun-light and pure air must be free. Some recommend large eaves, and others, rather larger space of the interior ; large wide eaves have advantage of being cool in hot summer, and being dry in moist winter. Doors and windows are shut after sunset. Clothing must be warm and light, as exposure to cold often induces the fever. For drinking, it is best to use boiled water. Some recommend alcoholic liquors as the preventives, but it is better not to use them, at least to excess. Travels and marches must be made in day time, and not after sunset. In ships, the bilge must be cleansed, and unhealthy cargo be avoided. As preventive medicine, quinine may be given, though we are not certain of its effect. Some use 0·15—0·30 grm. daily, and others recommend 1·0 grm. every eighth day. In some it seems to prevent the attack, and in others to mitigate it. In Formosa, many use it during travels through the country as the preventives. It is said that Laveran came to the conclusion that quinine must be given in doses of at least 0·30 grm. and that in some cases this must be increased to 0·50 or 0·75 grm. twice a week. During the Madagascar expedition quinine was given to the men for the first three days of the week at the doses of 0·10 to 0·20 grm. daily ; but notwithstanding this measure the troops were much affected by disease. Of arsenic and iron as the preventives we have no experience in Formosa. (Sei-i-Kwai Medical Journal, August 31, 1899.)

## MALTA FEVER, THE BACTERIOLOGY OF.

The micrococcus melitensis is a small coccus or cocco-bacillus about $0{\cdot}33\mu$ in diameter, the bacillary form being more pronounced when grown on gelatin. We have not been able to satisfy ourselves as to the presence of any motility other than Brownian movement. Gordon, however, figures it as possessing usually a single and sometimes three or four short flagella. Neither Durham nor the workers in the Netley laboratory have been able to confirm this observation. It stains readily with all the basic aniline dyes, while it does not retain its stain by the Gram-Weigert method. The growth of this microbe on all media is characterised by its slowness. The colonies, when developed, are small, transparent, and dew-like, and are often limited to the lower end of the tube. Broth (at 37°C.) becomes turbid, the turbidity appearing on the second or third day. There is no liquefaction of the gelatin. It may be further noted that on media which are highly alkaline there is little or no growth. Its slow growth, the appearance on agar, and the microscopical characters will generally lead to its identification. The behaviour of the culture in question in the presence of the specific serum will confirm with certainty the diagnosis. (From Drs. Birt and Lamb's paper in The Lancet, September 9, 1899.)

## MEASLES.—The Early Diagnosis of.

Rolly observed Koplik's spots in 24 out of 78 cases of measles several days before the eruption, and there were but 11, or, if 4 of those not seen until the rash was out be excluded, only 7 in which they were absent or invisible. He never saw them on the gums or tongue, and found them few in number on the lips, being most numerous on the cheeks opposite the molar teeth. At first not larger than pinheads, they increased in size day by day, appearing as slightly raised, bluish-white round sharply defined spots, surrounded by a ring of reddened mucous membrane, scarcely visible on the first day, but becoming darker and broader as time passed on. The only objects for which they could be mistaken are particles of curdled milk, but while these are easily removed by a camel's hair brush, Koplik's spots require a forceps to detach them. They are useful, not only in the early diagnosis of measles, but in its differential diagnosis from scarlatina, diphtheria, stomatitis, influenza and febrile catarrhal affections. In one case, though the rash was almost identical with that of scarlatina, Koplik's spots enabled him to diagnose it as measles, which the subsequent course of the illness confirmed. (From article in British Physician, October 16, 1899.)

## MORPHINE, THE NEWER SUBSTITUTES FOR.

These are described by Dr. Horatio B. Wood in *Merck's Archives* for March, 1899. The therapeutic properties of the three remedies: peronin, heroin, and dionin are in many respects similar. The chief use clinically for which they have been employed is to quiet irritative cough, especially such as often occurs in phthisical cases. For this purpose the reports are unanimously favourable; rarely do they fail, and they are nearly free from unpleasant after-effects. The forms of cough they have been used in are as many as are the different causes of cough;

in acute bronchitis, in chronic bronchitis, in various reflexcoughs, they have proved of benefit. It is claimed for all of them that they do not choke up the secretion nor affect disagreeably the general system. Heroin has been especially recommended in cases of dyspnœa, either cardiac or pulmonary in origin, by Strube; but the very fact of its benumbing the respiratory centre would suggest that it must be used cautiously for this purpose, lest there result a failure in the elimination of the carbonic acid. The doses for the three are about as follows: Peronin $\frac{1}{6}$ to $\frac{2}{3}$ grain (soluble in 133 parts of water); Dionin $\frac{1}{6}$ to $\frac{1}{2}$ grain (soluble in 7 parts of water); Heroin $\frac{1}{12}$ to $\frac{1}{3}$ grain (very slightly soluble). More recently a hydrochlorate of heroin has been put forward, which is described as being freely soluble in water and in alcohol, but insoluble in ether. (From Dr. Wynter's abstract in Treatment, July 13, 1899.)

## MYXŒDEMA.

At the meeting of the Bohemian Medical Society, Prochaska exhibited a young male dwarf, aged 20, who had every appearance of infantile myxœdema. There was no history of heredity; he was late in walking, his first teeth appeared when three years of age, and he is quite idiotic. His somatic appearances before treatment was commenced are described as follows:—Height 101 centimetres (39·76 inches), cranium asymmetrical, sutures irregular, features distinctly cretin-physiognomy with macroglossia, the gums thick, pharyngeal mucous membrane swollen, and the teeth carious. By palpation the thyroid cannot be distinguished. The body short, skin distinctly thickened by myxomatous infiltration of the deep cells. In the clavicular and axillary regions were tumours about the size of the fist, and the abdomen showed an umbilical hernia. Temperature averaged about 96·8 degs.; daily quantity of urine passed 1,000 grms.; number of erythrocytes three millions; weight of body 28·4 kilos or 62·48 lbs. After eleven weeks' treatment with thyroid tabloids, each containing 0·10 gramme = 1·5 grains of the thyroid substance, the following condition was observed:—Macroglossia had disappeared along with the infiltration of the skin and the swellings in the clavicular and axillary regions. The previously subnormal temperature rose one degree, while the number of pulsations and diuresis were distinctly increased. During the period of treatment the patient grew 3 ctm. in length, and distinctly improved in intelligence, spoke more, was active in movements, and ate and drank heartily, while the body weight increased 6 kilogrammes—13·2 lbs.—in the same period. No bad effects were observed throughout. He concluded by reviewing the collateral changes, and was convinced of the efficacy of the thyroid therapy. (Medical Press and Circular, July 19, 1899.)

### MYXŒDEMA.—The Early Diagnosis of.

Charles W. Chapman (*The Lancet*, September 30), regarding the early diagnosis of myxœdema, says: "I will conclude by calling attention to a diagnostic sign in early myxœdema which has proven useful. In chronic renal disease an early sign, when looked out for, is a certain sloppiness of the conjunctivæ which is best observed by pushing up the lower eyelid at the outer angle of the eye. This is known as the 'Bright's eye.' In myxœdema the same condition exists caused by the presence of mucin. When I find the conjunctivæ thus affected without any local cause I invariably examine the urine, and when this fluid is of normal specific gravity and is devoid of albumin I look out for myxœdema. I have more than once been put on the right track by these means." (Medical Record, October 21, 1899.)

### PLAGUE PROPHYLACTIC.—Preparation of.

In order to accumulate for the plague prophylactic a large amount of extracellular toxins, the bacilli are cultivated on the surface of a liquid medium, where they are suspended by means of drops of clarified butter or of cocoanut oil. The bacilli grow down in long threads into the depth of the liquid, and produce what we have termed a stalactite growth in broth, an appearance singularly peculiar to this microbe, and which, I hope, will be till further discovery accepted as the specific diagnostic feature of this microbe. The products of their vital exchange—the toxins—are secreted by the stalactites into the liquid and accumulated there. The growth is periodically shaken off the drops of oil, after which a new crop appears underneath the surface of the liquid. Thus a large quantity of bodies of microbes is collected at the bottom of the cultivation vessel, and the liquid itself gets gradually permeated with increasing quantities of toxins. The process is continued for a period of five to six weeks, at the end of which time the bodies of the microbes are extremely deteriorated. In order to render harmless the inoculation of the virus above described, I determined to kill the microbes by heating the material up to 65 to 70° C. (From report of Dr. Haffkine's paper before the Royal Society, British Medical Journal, July 1, 1899.)

### RABIES.

(By Fallen Cabot, New York). The Pasteur preventive treatment can never do harm, and if the patient desires it, it should always be used. It is given in the following way:—The spinal cord of a rabbit dead from laboratory rabies is hung in a sterile jar with two vents, one in the lower and the other in the upper part, both filled with absorbent cotton. In the bottom of the jar is placed a few sticks of caustic potash to aid the drying process. The jar is kept in a dark room, at a temperature of 68° to 72° F. A portion of the cord thus prepared is emulsified by the gradual addition of sterile water and by means of a glass rod. A cord dried fourteen days is the one used for the first injection, and then each day a fresher cord is employed until one dried only three days is finally used. The dose of the emulsion for the older cords is three centimetres for adults, and then, finally, one and a half centimetres for the fresher ones. The injections should be given under aseptic precautions, either into the subcutaneous tissue of the abdominal wall or the buttock, care being taken not to penetrate the muscular tissue. No particular reaction, either local or general, should follow the injections. Before the cord is emulsified at least two tests should be made to prove its freedom from any chance contamination. The usual course of treatment lasts fifteen days, in which time twenty to twenty-five injections are given. If the subject comes late, or if the injury is very severe and near a large nerve, the intensive form of treatment may be employed. In this way more injections are given daily, thus rapidly approaching the time to use virulent cords. Children bear nearly as large doses of the cords as adults. Animals which have bitten people should never be killed, but captured, and placed in a kennel under lock and key for a week. If at the end of that time they are well, there is naturally no danger for the person bitten. If the animal dies, an autopsy should be made, all the organs examined, and a portion of the brain and spinal cord emulsified and inoculated into guinea-pigs and rabbits. If a disease which could cause death should be found in other organs, it is of importance, but one should also make the inoculation-tests to demonstrate beyond a doubt that rabies was not also present in the same case. In this way it could be said truthfully that, according to the result of the autopsy and tests, the animal did or did not have rabies. (From abstract in Annals of Surgery, September, 1899.)

### Rabies in the Dog.

There are two kinds, dumb rabies and true rabies. In dumb rabies the dog does not try to bite, in fact cannot, for the jaw is paralysed as indicated by dripping saliva. The animal is reticent and hides away from observation and finally passes into paralysis and death. In typical rabies the dog passes from a depressed nervous condition to mania, delirium and finally paralysis. It would seem that the dumb form is but the rabid form with some of its phases left out. In the early stages of true rabies the dog's entire nature seems changed, a cross dog becomes amiable and an amiable dog becomes cross ; he is easily frightened, refuses food, or else attempts to eat it but cannot swallow, or will eat all sorts of trash. Signs of incoördination begin to appear, also trembling; the eye is injected and there is a slight tendency to choke; the voice becomes hoarse and comes deep from the throat. The saliva of a dog in these stages is fully virulent, but the symptoms as yet have nothing especially to indicate hydrophobia, as many of these may be absent. The dog tries to doze, but its slumbers are broken; it turns about restlessly; it runs about and snaps in the air and seems to see imagined forms. The dog can still be controlled by speaking to it; it is thirsty and laps water but cannot swallow; it bites everything in reach; can still eat solid food. From this the animal passes to a state of delirious rage; it attacks all animals within reach, but does not bark as it is wont to do in fighting. It breaks out its teeth and tears its body without any pain. Foam does not drip from the mouth as yet. After the animal has exhausted itself, periods of exhaustion or paroxysms occur. Paralysis of hind legs next follow, the powers of incoördination are lost; the dog totters, gives a slight convulsion, and dies. Duration of illness, five to ten days. Of this multitude of symptoms, any or many may be absent, but the points of special importance are the muffled bark, a tendency to snap up foreign material, and incoödination, with, finally, paralysis and death. A mad dog may be able to eat and even to swallow water at some stages, so it is no evidence of the lack of rabies. On the other hand, perfectly healthy dogs may act in a very peculiar manner; a nervous dog is often subject to having peculiar spells of barking and acting in a crazy manner. There are certain pathological conditions in the dog which give rise to symptoms somewhat similar. Among these conditions are meningitis, intestinal parasites and nephritis with uræmia. These are often mistaken by the laity for true cases of rabies. (Taken from a leading article in the Medical Dial, July, 1899, p. 238.)

## RED-MARROW IN ANÆMIA.

Dr. J. S. Fowler (*Scottish Medical and Surgical Journal*, September, 1899), working in the laboratory of the Royal College of Physicians, Edinburgh, experimented on rabbits with a view of determining the value of the red-marrow method in the treatment of anæmia. The summary of his results is briefly as follow: (1) Subcutaneous injections of red bone marrow have no action on the red corpuscles or hæmoglobin of healthy animals. (2) When the red corpuscles and hæmoglobin fall below their normal limits, injections of marrow produce a decided rise in both, but this rise, while well marked and sudden, is of short duration. (3) Along with the increase of the red corpuscles there is no corresponding improvement in the form of the cells. (4) The active principle is present in an aqueous but not in an alcoholic extract of marrow. It is not precipitated by boiling, and does not contain iron, and may possibly be a deutero-protose. (Montreal Medical Journal, October, 1899.)

## RHEUMATISM, ACUTE, IN INFANTS.

Dr. D. J. Milton Miller has made an extensive review of the literature upon this subject, and finds that acute articular rheumatism in infants is very rare. A number of cases has been reported as such which would not bear the test of the essential features of the disease as seen in adults. He then reports an example of genuine acute polyarticular rheumatism in an infant nine months old. He considers that in the diagnosis of such a rare condition as acute articular rheumatism in young infants every other possible cause for the joint affection must be excluded before we can assert that a given case is rheumatic. The points necessary to be established in making such a diagnosis are, mobility, proneness to migrate from joint to joint, absence of all tendency to suppuration, frequency of inflammation of the cardiac serous membranes, the favourable influence of the salicylates, and a family history, together with the absence of such affections as are apt to be attended with inflammation of the joints. According to this test only 19 undoubted instances of acute articular rheumatism occurring in infants under one year were found in the literature. (Boston Medical and Surgical Journal, October 19, 1899.)

## RICKETS.—The Treatment of.

For patients in the first few years of life, from 1½ to 5 years, my plan of campaign is practically the same for all. For those with heavy bodies and heads, protuberant bellies, head sweats, and commencing or acquired bow-legs or knock-knees, the food supply is carefully attended to, the digestive functions restored as soon as possible, starchy food being limited, fats being recommended, especially bacon fat and dripping, which I believe has for these cases a high nutritive value. For very young children especially the addition of some cream to the dietary is most valuable. Condensed milk, if it be taken, should be replaced by cow's milk boiled, and a weak gravy soup or broth will often help to stop the rickety tendency. For marasmic patients nothing acts so well as a daily rubbing under each axilla of cod liver oil. For all these rachitic patients, then, varying the dose slightly according to age, I prescribed cod liver oil and syrup of the phosphates of iron. In very hot weather I let the children leave off the oil, but the mixture generally is very well taken, and the results certainly are most satisfactory. In cases with any tuberculous or syphilitic history, the syrup of the iodide of iron should be substituted for that of the phosphates. Next as to the treatment of the rickety deformities, especially of the leg bones. In the case of patients under the age of 4 years, even with very marked bowed and bent tibiæ, and some degree of knock-knee, I can assure the parents with great confidence that after nine months' to fifteen months' treatment these deformities will be very greatly improved or altogether remedied. I am prepared to leave any question of operation to a later age—say that of 5 or 6 years. By that time we can see whether ordinary treatment has been able to effect anything, the bones have got harder, and there is less risk of producing the calamitous condition of pseudarthrosis. These children's legs should be put up in splints, preferably outside ones, which may purposely be made three or four inches too long. The splints should be taken off once every month or three weeks in the winter, and once a fortnight in the summer. I do not deny that a rickety child's legs occasionally become much straighter with no treatment whatever. Still I feel sure that the great mass of these rickety children are far better when off their feet—for this reason, that the deformity of the pelvis is so much less apt to occur, as little or no pressure is acting upwards through the acetabula while the child is lying down, or even sitting up. (From Dr. E. Mansel Sympson's article in Pediatrics, October 15, 1899.)

## SCARLET FEVER.

The following are Dr. Stickler's conclusions :—(1) The mucus of the throat and mouth has been shown with absolute certainty to contain the contagium of the disease. (2) The early eruptive stage of scarlatina is exceedingly infectious because of the presence in the discharges from the mouth and throat of the special poison of the disease. (3) The contagium of the disease being in the mouth and throat secretions, care should be taken not only to disinfect these parts as perfectly as possible, but to keep the tongue, mouth, and lips moist constantly, if possible, in order to prevent the contagious principle being forced into the air of the room by the exhalations of the patient. (4) Mouth and nose wipes should be used instead of spit-cups and costly handkerchiefs, and they should be destroyed by fire before the discharges on them dry, *i.e.*, at once. If fire be not available, disinfecting solutions should be used strong enough to render the poison inert. (5) The soiling of the bed-clothing and personal apparel with mouth discharges should be prevented if possible. In the event of such contamination, they should be disinfected as soon as possible. (6) No toys or implements of any sort that cannot be boiled or subjected to the strongest germicidal solutions should be given the patient, as they are apt to become soiled by the mouth secretions. (7) Those who minister at the bed-side should be especially careful as to personal contamination and disinfection from the moment they enter the room. (8) The nostrils should be taken thorough care of, as the morbific matter which finds its way into these parts will, in the dry state, easily find its way into the atmosphere of the room, thus making the spread of the disease more probable. (Medical Record, September 9, 1899.)

**Scarlet Fever.—Desquamation in.**

On parts of the surface where the skin is normally soft and smooth, as, for instance, the chest, the abdomen, the groins, the inner aspect of the arms, and the thighs, the cuticle separates in the form of delicate shreds or scales. It is more especially in these regions that the desquamation presents certain characteristics which are very distinctive of the disease. At the earliest stage, as soon as the tension of the skin associated with the inflammatory hyperæmia of the rash has subsided, on careful inspection the most superficial cuticular layer will be found to present a number of small perforations of about the size of a pin's head or larger which give to it a "worm-eaten" appearance, each of the "pin-holes" corresponding to one of the finely papular constituents of the recent eruption of which the delicate investing layer has become rubbed off. During the next few days each of these little "pinholes" or rings becomes gradually larger by centrifugal extension, until its periphery becomes merged with those which have spread from other and neighbouring centres. As a result anything suggesting this ring-like arrangement then becomes indistinguishable, and more or less triangular islets or shreds of cuticle remain, which are ultimately shed, thereby completing the desquamative process, so far as that portion of the surface is concerned. The early stage of the peeling, then, is characterised by this "pinhole" appearance of the cuticle, and the later stage by these "islets" or irregular shreds of epidermis which are the last to separate. This peculiarity yields trustworthy evidence as to the peeling being scarlatinal; and, moreover, according to its progress, and the parts of the surface which have become invaded, valuable indications may be derived as to the length of time which has elapsed since the commencement of the attack. (From Dr. Foord Caiger's paper in The Lancet, June 17, 1899.)

**Scarlet Fever.—Hot Bath in.**

Hanson (*Columbus Med. Jour.*, August 5, 1899), after experimenting with baths at different temperatures, concludes that in the treatment of scarlet fever a bath at 90° F. gives just as good results as one at a lower temperature, and that it can be more safely used in asthenic cases, and is more comfortable to the child and more agreeable to the attendants than the cold bath. If a bath-tub is not at hand, a large wash-boiler or wash-tub will answer every purpose. The child should be constantly rubbed while in the water, in order to effect a rapid change of the blood in the surface of the body. Eight minutes is usually sufficient for the bathing. The child should be dried quickly and put in bed without stopping to put on a night-dress or other clothing. The bath should be repeated whenever the temperature reaches 103° F., or whenever the child becomes restless. The good effects consist in a reduction of temperature, and a stimulation of elimination and of the circulation. The repetition of the bath minimises nerve exhaustion, and hastens convalescence. In no case in which Hanson followed this plan of treatment were there any complications or sequelæ. The more he used it the more confident he became of its good results. (From abstract in the Medical News, October 14, 1899.)

### Scarlet Fever.—Spread of.

To prevent the dissemination of the scales thrown off from the skin in the sequence of scarlet fever, Williams (*Boston Medical and Surgical Journal*, September 14, 1899) recommends the application of a mixture of one part of glycerine to seven parts of ten-volume solution of hydrogen dioxide containing a small amount of free hydrochloric acid. It has been further found that if the patient is rubbed all over with a similar solution, but without the hydrochloric acid, the period of desquamation may be materially shortened and removal of the layer of epithelium hastened. (Pediatrics, 1899, p. 464).

## SERUM TREATMENT OF DISEASE.

Leprosy and tuberculosis may be, in my opinion, entirely thrown out of consideration. There is no satisfactory evidence as yet adduced to show that in either of these diseases anything has been accomplished either in the prevention or cure. In three diseases in the human being, rabies, tetanus, and diphtheria, anthrax and probably rinderpest in animals, we have perfectly efficient means for conferring immunity which are practically available. It further seems probably that immunity may be also conferred to snake venom. There is also very strong evidence of the practical value of the protective inoculations against cholera and plague. All the work with reference to typhoid fever, streptococcus infections, and pneumonia must be considered as only in the experimental stage. When the curative treatment is considered, in only one disease can it be said that serum-therapy has afforded us a perfectly satisfactory method of treatment, that is in diphtheria. In all of the others all of the practical problems remain as yet unsolved, but in some there is a reasonable prospect of an early solution. (From Dr. Bigg's paper in the Medical News, July 29, 1899.)

## SNAKE-BITE.—Antivenene Serum in.

Major S. J. Rennie records a successful case thus treated and makes the following remarks: That we have in Calmette's antivenene serum a most powerful remedy against the bites of venomous reptiles has been fully proved both in the laboratory, and also, in a few instances, in actual practice. In the year 1896 it fell to my lot to treat the first case in which this serum was used in India, which was detailed at the time in the columns of this journal, and since then other successful cases have been reported. The case under consideration is, however, of especial interest, in that it proves, first, that no matter how acute the symptoms, or how far advanced the effects of the poison, it is never too late to use the antidote; for, as will have been noted, the boy, in this instance, was, to all intents and purposes, dead at one time; and, secondly, that the "antivenene" will keep for an almost indefinite period, and exposed to all vicissitudes of climate, as I had the serum used in this case in my possession in the plains of India for nearly four years. (British Medical Journal, November 18, 1899.)

## SUPRARENAL EXTRACT WITH COCAINE FOR BLOODLESS AND PAINLESS OPERATION.

For small amounts the limit of decided physiological effect is for suprarenal extract (in terms of dried gland) $\frac{1}{4}$ per cent., for cocaine $\frac{1}{8}$ per cent. dilution. Accordingly it is well to use an amount of suprarenal extract twice as great, or equal to that of cocaine. I find the ordinary solutions of 10 per cent. suprarenal extract and cocaine useful for the nose and pharynx, while combined 20 per cent. solutions are best for the ear and larynx. These solutions are conveniently prepared from the tabloids which Messrs. Burroughs and Wellcome have prepared at my request; each tabloid contains the soluble material of 5 grains of the dried gland. Solutions containing low percentages may also be used effectively, but the strength mentioned appears to be preferable. The solution used should contain both cocaine and suprarenal extract, and should be packed in on wool for half an hour to obtain the full effect, which, in the case of the nose, is a shrunken and white mucous membrane. It must be remarked, as a rule, that bleeding sets in at the end of two hours, but this may be obviated by plugging immediately after the operation with dried cyanide gauze. The combination of cocaine and suprarenal extract may be used with success in inflammatory conditions, and operations on the eye and other regions. (From Dr. E. A. Peter's note in the British Medical Journal, July 8, 1899.)

## TALLERMAN TREATMENT BY SUPERHEATED STEAM.

(From Dr. Willis' paper.) Of ten cases five have been cured and five (three of whom are still under treatment) markedly relieved. The apparatus consists of a copper cylinder, to all intents and purposes an efficiently-ventilated oven, which is heated by gas, electricity, or oil, and into which one or other of the patient's limbs is inserted. For most cases a temperature of 240° to 280° is sufficient (in my own cases 280° was the highest temperature used) but patients have been treated at 300° to 400° beneficially. The apparatus is provided with a simple means of preventing scalding. The duration of the bath is from thirty to sixty minutes, or more. The effects produced are: (1) Profuse acid perspiration (general); (2) temporary erythema of the skin of limb in cylinder; (3) increase in the rate of the pulse, which also becomes fuller and more forcible; (4) increased number of respirations (unusually); (5) heightened temperature; (6) decided relief from pain; (7) quiet, restful sleep at night. In fifteen to thirty minutes after a bath the pulse, respirations, and temperature are normal again. In no case has there been any pain or inconvenience during or after a bath. (Australasian Medical Gazette, August 21, 1899.)

## TETANUS CURED BY INJECTION OF BRAIN EMULSION.

A. Krokiewics, Cracow (*Wien. klin. Woch.*, 1899, No. 28), who has already published two successful cases of the above, reports a third in a countryman, aged 35, tetanus following a leech bite. All symptoms of a traumatic tetanus fully developed on the tenth day, and unrelieved by narcotics, when an emulsion of an entire rabbit's brain was injected. The spastic convulsions were presently much relieved. Two other such injections given afterwards; no abscesses. Patient discharged cured in about three weeks. (Epitome, British Medical Journal, September 9, 1899.)

## TETANUS.—Intracerebral Injections in.

(By A. Kocher, *Centralbl. f. Chir.*, June 3). This communication is not a plea for these injections, but merely an announcement that the technic suggested is absolutely simple and harmless and requires no special skill on the part of the general practitioner. After a subcutaneous injection of 1 per cent. solution of cocaine, the skull is bored through with a small drill held perpendicularly, the drill withdrawn and the syringe needle inserted in its place into the brain matter. The spot best adapted is 2·5 to 3 cm. laterally from the bregma, in front of the precentral sulcus, on a level with the sulcus between the middle and superior convolutions. This spot allows the passage into the ventricle without injury to the motor centres. Four cases of tetanus observed recently at the hospital (Berne) were all treated with these intracerebral injections of tetanus antitoxin and all recovered. (Journal American Medical Association, July 1, 1899.)

## Tetanus.—Prophylactic Treatment of.

The ideal method of treating tetanus is the one we quoted from Professor Landouzy of the University of Paris in reviewing his book on "Serum Therapy." He suggests the use of prophylactic injections of tetanus serum in cases of suspicious wounds. Tetanus antitoxin has of late years been made of such high antitoxic potency that it requires but the injection of a few drops of the serum to absolutely preclude the possibility of the development of tetanus. This procedure is certainly worth trying in the case of all contused and lacerated wounds that have been exposed to contamination by street dirt, and especially when they have been inflicted by firearms. It could do no harm even if there were no tetanus germs present. The serum, though of such high antitoxic potency, is absolutely innocuous. It would certainly save a great many lives and save the individuals, too, from a most horrible death in the midst of the conscious agony of tetanic convulsions. No one has yet, we believe, reported the use of this method in America. It seems distinctly worthy of such a trial. (From a leading article in the Medical News, July 22, 1899.)

## TUBERCLE BACILLUS, THE, AND ITS ALLIES.

Altogether one may fairly conclude :—(1) That the so-called tubercle bacillus shows branching forms and clubs, and in the tissues the fungus is often arranged in a radiated manner—characters which bring it into close relation with a large group of micro-organisms, variously named Streptothriceæ, Oospora, Nocardiaceæ, Cladothriceæ (in part). (2) The tubercle fungus has several varieties, probably brought about by the altered conditions in which its subsists. These varieties can be converted the one into the other. The variations between the human tubercle bacillus and the bovine bacillus are so slight as to render a distinction between them impracticable. The bacillus of avian tubercle presents more marked differences, but the differences are not those of species. (3) There exists a group of tubercle-like acid-fast bacilli, which are practically indistinguishable from the genuine Koch's bacillus. These tubercle-like bacilli also belong to the streptothriceæ and are widely distributed in Nature, whether they are identical with Koch's bacillus, or merely represent a stage in its life-history, is not known with certainty. (4) These acid-fast tubercle-like bacilli form a distinct group of which some members (Moeller's fungi) appear to be saprophytic, others (tubercle bacillus) are facultative parasites; while bacillus lepræ is an obligate parasite, and so far as is known affects only the human race. (From Dr. Bullock's summary of recent work on the Tubercle Bacillus, The Practitioner, October, 1899.)

## TUBERCLE BACILLI.—Sunlight and Moisture.

William C. Mitchell and H. C. Crouch, of Denver (*Journal of Pathology and Bacteriology*, May, 1899), after a number of experiments upon the influence of sunlight and tuberculous sputum, summarised the results obtained by them as follows: (1) That the tubercle bacillus as expectorated on a sandy soil is still virulent after thirty-five hours' exposure to the direct rays of the sun in this altitude. (2) That some sputum has suffered but little appreciable diminution in virulence after twenty hours' exposure. (3) When after twenty to thirty-five hours' exposure the virulence is gradually diminished and finally lost, the exposure extends beyond the last-mentioned time. The writers say that the conclusion which must come as to the infectiousness of the sputum as expectorated by consumptives in this altitude while engaged in their daily avocations is that such sputum had ample time to become desiccated and blown in the atmosphere before being robbed of its power to cause tuberculosis if inhaled by susceptible individuals. Since there unquestionably exists a great degree of immunity against tuberculosis in this region and at this altitude, its explanation must be sought on other grounds than that exposure to sunlight robs the expectorated matter of its virulence before it is blown about and inhaled. In high altitudes both the absolute and the relative moisture is low, and this, together with a much lessened atmospheric pressure and almost constant winds of greater or less degree, greatly facilitates evaporation. Thus there are created conditions extremely favourable in the abstraction of moisture by the atmosphere from whatever substances it comes in contact with. Moist surfaces of the lung, in common with other moist surfaces, must suffer considerably more loss from moisture at this altitude than at lower ones, and it is this constant battle for moisture compensation, especially as it occurs in the lungs, that we believe to be one and by no means the least of the factors which either aids in granting such a large measure of immunity against tuberculosis here or in arresting or retarding such processes in their incipiency. We know that the tubercle bacillus grows but poorly or not at all in media deficient in moisture, and while it hardly seems possible that there could be moisture enough extracted to leave the alveolar linings in a state too dry to offer a suitable nidus for the invading bacillus, yet it is not improbable that this constant and rapid pulmonary evaporation creates conditions extremely unfavourable to its development. (Medical Age, June 5, 1899.)

## TUBERCLE BACILLUS IN THE FÆCES.

Rosenblatt (*Centralblatt für innere Medicin*, 1899, No. 29; *Settimana medica*, July 29), noting the difficulty of finding the tubercle bacillus in advanced cases of intestinal tuberculosis, owing to the fluidity of the stools with which the bacilli are mixed up, conceived the idea of administering tincture of opium until the stools become solid and formed. The micro-organisms are then sought for solely on the surface of the fæces, where, it is said, they can be found without difficulty. (New York Medical Journal, August 26, 1899.)

## TUBERCULIN TEST.

Dr. Edward O. Otis, of Boston, formulates the following conclusions:—(1) The tuberculin test indicates early tuberculosis by a general reaction before it can be detected by other methods, with the exception, possibly, of the Roentgen rays. In the majority of cases, doses of from 5 to 10 milligrammes of Koch's original tuberculin are sufficient; (2) in these doses no injurious effects occur; (3) established tuberculosis may fail to give a general reaction from doses of from 10 to 12 milligrammes; (4) a similar reaction is given by syphilis in an undetermined proportion of cases; (5) there is a dose not definitely settled with which a non-tuberculous person may react or simulate a reaction; (6) the reaction may be deferred from six to twenty-four hours. The author formulates the following rules to be observed in making the test:—(1) Always use the same tuberculin of a standard strength; (2) employ strict asepsis in the injection; (3) make the injections deep into the muscles of the back, arm, or leg; (4) beginning twenty-four hours before the injection, a record of the temperature should be kept every two, three, or four hours ; (5) the test should not be repeated until several days have elapsed ; (6) the general reaction may be depended upon in early cases, but in late established cases, if the general reaction fails, we should look for the local. (Boston Medical and Surgical Journal, July 6, 1899.)

## TUBERCULOSIS AND DUST.

Dr. Girsdansky draws the following conclusions : (1) That the broom, far from serving any hygienic purpose, is the cause of the maintenance of organic dust in the atmosphere of the large cities of the world, and as such is the most important cause of the existence and spread of tuberculosis, probably also of various other infectious diseases, and should therefore be abolished. (2) That the carpet is an unhygienic article serving as a fine breeding ground for vegetable parasites, necessitating the use of the broom and the duster, and thereby becoming a reason for the existence of organic dust. (3) That the only proper and safe way of procuring cleanliness of the floors and streets of our large cities is by the free use of water as a cleansing agent in the shape of showers, sprinkling wagons, hose, mops, &c. (4) That all floors and floor coverings of the home and the street ought to be so constructed as to facilitate the free use of water in the shape of shower or mop as a means of procuring cleanliness. (New York Medical Journal, September 9, 1899.)

## TUBERCULOSIS AND MILK.

Considerable positive evidence exists of the danger from use of milk derived from tuberculous cows, whether the udders are involved in the disease or not. Tubercle bacilli have been found not alone in such milk, but also in butter and cheese prepared therefrom. Additional evidence of a confirmatory character is supplied by the report recently issued by the director of the Jenner Institute of Preventive Medicine (*Lancet*, September 25, 1899) to the effect that of one hundred samples of milk submitted from the Hackney District, seventeen contained tubercle bacilli of virulent character, as determined by animal inoculation. The tests with regard to twenty-three other of these specimens were not satisfactory. As it is not always easy to determine or to recognise the existence of tuberculosis in cows, it is a wise precaution to boil all milk intended for consumption. When the disease is known to exist in animals, their milk should not be employed at all, and its sale should be prohibited, and, so far as possible, every effort should be made to recognise and to eradicate the disease. The danger is less insidious, though it likewise exists, with regard to the use of meat from tuberculous animals, but here the existence of the disease is likely to be obvious from the presence of tubercles, except in miliary tuberculosis, when the blood-vessels and the lymphatics may contain the bacilli. The safeguards in this connection consist, also, in thorough disinfection, by cooking of beef intended for consumption, and suppression of the sale of all meat from tuberculous animals. (A leaderette in Journal American Medical Association, October 14, 1899.)

### Tuberculosis, Bovine.

The fact should always be borne in mind that with animals, as with human beings, tuberculosis does not spread much in those which have plenty of fresh air and light. The health authorities on the part of the general public should therefore insist that the cows from which milk is obtained should be kept in well-lighted and well-ventilated sheds or barns, and should wherever possible be turned out every day in order that these places may be well aired. In those cases in which the udder is infected the only remedy is to slaughter the animals; in other cases in which the beasts react to the tuberculin test isolation should be insisted upon. (From a leading article in the Medical Record, August 12, 1899.)

### Tuberculosis, Congenital.

While congenital tuberculosis in both men and the lower animals is rare, there is no doubt that it does occasionally occur. More often that which is transmitted from parent to offspring is a predisposition to the disease, the activity of which is augmented by exposure to infective conditions. An instance of congenital tuberculosis in the calf was recently reported by Ravenel, to the Pathologic Society of Philadelphia, and specimens from a further example of the same kind were exhibited by MacFadyen at a late meeting of the Pathological Society of London. As a rule the calves of tuberculous cows are born free from tuberculosis, and infection is usually, if not always, associated with tuberculosis of the placenta or of the uterus. Dissemination takes place under these circumstances through the blood-stream, as indicated by the wide-spread and discrete distribution of the lesions. (Journal American Medical Association, July 15, 1899.)

### Tuberculosis in Childhood.

Dr. G. F. Still (London) read a paper on this subject before the British Medical Association, 1899. In 1,728 consecutive post mortem examinations in children, Dr. Still found tubercle present in 269, though in many of these cases death took place from other causes. Tubercle was most frequent during the first two years of life, and as these were the years when milk formed the main article of diet, it was natural to look upon it as the main source of infection. But he found that the lungs were affected even more often than the intestine ; and seeing that young children swallow all their expectoration, frequent intestinal infection was only what one would expect. The condition of the lymph glands was only important as indicating the sequence of infection, and much more reliable than the clinical history. Following out this idea, he had come to the conclusion that in his cases infection had occurred through the lungs in 138 cases, and through the intestine in 63. During the first two years of life, the predominance of infection through the lung is greater than at any other period. In 15 cases, infection had occurred through the ears, and 13 of these were under two years of age. These might be grouped with lung cases, being respiratory in origin. When death is due to some other cause, one may find a single group of lymphatic glands affected and healed. Of 43 cases of this kind, 25 indicated infection through the lung, 16 through the intestine, and one through the ear, again showing the importance of the respiratory passages. These figures seem to indicate that milk is not the chief source of infection in childhood, and although one cannot be too careful as to the purity of the milk supply, one must also emphasise the great importance of fresh air and proper hygienic conditions. (Pediatrics, September 15, 1899.)

## TYPHOID BACILLI IN THE URINE.

Summing together Richardson, Horton-Smith, and Blumer's cases, we find that, of 60 cases observed, positive results were obtained in 15, or, in other words, typhoid bacilli are present in the urine in about 25 per cent. of the cases of this disease, while in about 5 per cent. they are present in such enormous quantities as to render the urine turbid. There are certain very interesting points in connection with this appearance of the bacilli in the urine. The earliest day on which they have been discovered so far has been the 15th ; on the other hand they have been found as late as the 39th day and 10 days after final defervescence ; in one case they were noticed during a period of 70 days, far into convalescence, and several patients were actually discharged from St. Bartholomew's still exhibiting the phenomenon. The fact that there may be enormous numbers in the urine and at the same time no bacilli are to be obtained from the blood, would indicate that we have not here to deal with a simple filtration or separation of the bacilli out of the circulation ; there must be a proliferation either within the tubules of the kidney or in the urinary passages in general.

This long persistence in the urinary tract of these micro-organisms is on a par with their persistence in the gall bladder and in the neighbourhood of joints, weeks and it may be months after the acute attack has completely passed away. These observations bring us face to face with what, from a public health point of view, is a very serious problem. In the first place it clearly is no longer admissible to take no care with regard to the disinfection of the urine of typhoid patients. Even, if in only a certain proportion of cases this be infectious, the fact that that proportion is a large one makes it imperative that every care be taken to disinfect the total excreta. In the second place we have to recognise that it is in the late stages of the disease that the urine may be infectious and that this infection may continue far into convalescence. In one case Petruchsky found the enormous number of 172,000,000 bacilli in each cubic centimeter of urine. Indeed, as Horton-Smith points out, the wide contamination of extensive sources of water supply is more easily explicable by means of this infected urine than by the fæces. It would seem almost impossible to lay down strict rules with regard to the disposal of the urine of those who regard themselves in complete health; it is, however, possible for the physician to order that, until the very last day of their confinement as patients, the urine of those suffering from typhoid should be disinfected; beyond this point it is practically impossible to lay down any rule. Happily, there is still another way out of this difficulty. Richardson (*Journ. Exper. Med.*, 1899, vol. 4, p. 1) has proved very clearly that 10 grains of urotropine administered three times a day leads to the rapid disappearance of the bacilli from the urine. (From an editorial article in the Montreal Medical Journal, August, 1899.)

## TYPHOID FEVER AND SOIL POLLUTION.

Professor Notter (*Epidem. Soc.*, May 19, 1899) stated that in India a soil temperature over 60° F., and moisture short of saturation—15° for example—were the most favourable conditions, but that during the rains, when the soil was nearly saturated, the fever ceased. Extreme organic pollution of the soil seemed also to oppose the growth of the bacilli. (Treatment, November, 1899, p. 553.)

## Typhoid Fever, Diet in.

Dr. E. J. Abbott (*Northwestern Lancet*, August 15, 1899) says that it has been his practice for years to allow his typhoid patients what is termed "soft diet" instead of milk diet, namely, a diet consisting of milk if it is agreeable, buttermilk, all kinds of soups and broths, eggs, raw or soft, or the yolk, if they like, of hard-boiled eggs. By hard-boiled eggs he does not mean an egg that is boiled four or five minutes, just sufficient to coagulate the albumen, but an egg that is cooked from one-half to three-quarters of an hour. The yolk of an egg in this condition is easily digested and is nutritious. He also permits custards, rice, farina, junket, tea, coffee, chocolate, cocoa, ice cream, and particularly milk and cream-toast and all foods of that class. The writer says he has never yet had cause to regret feeding his patients in this way, and is convinced that this diet leaves less waste of indigestible material as a possible irritant to the ulcerated surface than does an exclusive milk diet. The writer also advises the lengthening out of the intervals of feeding from two to three or four hours, perhaps even longer, and thinks that by doing this his patients relish their food more than before, and that they will digest it better and will recover from the fever stronger and in better condition than they would otherwise. (Medical Age, October 10, 1899.)

## TYPHOID FEVER.—Prognosis of.

Six ambulatory cases are included in the list of 250 cases; all the six proved fatal. Violent or active delirium was also invariably fatal. Cyanosis was a sign of grave import, only one case of five in which it occurred recovering. Hiccough occurred before death in two fatal cases. It did not necessarily prove the presence of peritonitis. Thin watery offensive stools were observed in one case with similar termination. Of 27 patients with a temperature reaching 105° F., 10 died (40 per cent.); two in whom 106° F. was reached, both succumbed. On the other hand, a pulse of over 140 persisted for days and yet recovery took place. Among cases in which hemorrhage from the bowel occurred the mortality was 28·5 per cent., as against a total percentage mortality of 18·5 per cent. Only one case was directly fatal, but this complication evidently increased the gravity of the outlook. Floccitation and carphology were not incompatible with a favourable termination, nor was pregnancy a bar to recovery. Absence of delirium was not always a good sign, at least one severe and fatal case being accompanied by clearness of mind throughout. (From Dr. Bosanquet's paper in the British Medical Journal, July 8, 1899.)

## Typhoid Fever.—Prophylaxis in.

Taylor (*Progressive Medicine*) says: (1) Isolate patients suffering from typhoid fever, or at least do not permit them to be treated in a room or ward containing young people who have not previously had typhoid. The warning contains some wholesome advice too often neglected, and sometimes with sad results, because we are persuaded that typhoid is not an air-borne disease, and forget that contiguity favours infection, because precautions will inevitably sometimes be neglected. (2) Nurses for typhoid cases should, if possible, be only such as have had typhoid themselves. In a family the young people should be removed. (3) The floor of the sick-room should be oiled, so as to be impermeable. Carpets and rugs should be removed, and the raising of dust should be avoided by frequent use of a cloth dampened with antiseptic solution. (4) The nurses should wear linen clothes, which they should remove when they leave the sick-room, and in general they should be warned to be circumspect in their relations with others, and especially careful of the utmost details of antisepsis in the matter of the preparation of food and drink for themselves and others. (Medical Record, September 23, 1899.)

### Typhoid Fever.—The Serum Treatment of.

A London correspondent of the *Interstate Medical Journal* for July writes that the main point of interest centres round the serum-treatment experiments which are being conducted in different parts of the world. One of the late commissioners, Professor A. E. Wright, of the Army Medical School, Netley, took advantage of his visit to the typhoid districts of India to avail himself of the opportunity of inoculating certain British troops against this dread enemy of the soldier on foreign service. It appears that in the "West Riding" regiment, stationed at Bangalore, two hundred and fifty of the soldiers volunteered to be inoculated with the typhoid serum as a protectionary or prophylactic measure. When at Rawal Pindi, Dr. Wright addressed the "Queen's" Regiment on the advantages of inoculation, mentioning that fifteen hundred soldiers are annually ill with enteric fever, and that one out of every five dies. Out of two hundred attendants at the Maidstone Asylum in Kent in the South of England, ninety-five persons were inoculated, and none contracted fever, while of those who refused to undergo the process, nineteen suffered from the disease. At Khartoum, of eight young subalterns, six consented to inoculations, and the other two agreed to take their chance; of these latter, one was very ill with typhoid, the other died; the inoculated officers escaped. Professor Wright also inoculated the troops in garrison at Lucknow, three hundred of the 3rd Hussars, and one hundred and twenty Cameronians. Diligent experiments are being made with the typhoid serum in more than one physiological laboratory in this country. (New York Medical Journal, August 5, 1899.)

### Typhoid Fever.—The Serum Reaction of.

The fact that the reaction is usually absent during the earliest days of the disease has led many to the conclusion that its value is slight, since it is only in the earliest days of the disease that the diagnosis is difficult. But in answer to this it should be stated :—(1) That the reaction usually is present when the patient first consults the physician, not when he begins to feel poorly. In most parts of the country typhoid is chiefly the disease of the less-educated classes, and hence little attention is paid to the earliest symptoms, and almost all cases are "walking typhoids" in the sense that they keep about for a day or two after they begin to have fever. Over ninety per cent. of the cases seen at the Massachusetts General Hospital since 1896 have shown the typical reaction at the time of entrance. (2) But even when the reaction does not appear until the second week or later, it is of the greatest diagnostic value in many cases—especially : (*a*) in the diagnosis of abortive or atypical cases ; (*b*) in the differential diagnosis between typhoid and typhus, malaria, remittent, dengue, Malta fever, yellow fever, and other infections of tropical or semi-tropical countries ; (*c*) in the identification of obscure forms of tuberculosis or deep-seated suppurative processes ; (*d*) in the differentiation of typhoid from pneumonia and influenza ; (*e*) in the retrospective diagnosis of typhoid. This last application of the serum test is of value not only for diagnosis, prognosis, and treatment, but in the investigation of epidemics, and from various medico-legal standpoints.—Dr. Richard C. Cabot, "The Serum Diagnosis of Diseases," p. 81. (Medical Record, July 22, 1899.)

### TYPHUS FEVER.—The Diagnosis of.

A history of exposure to the disease, a sudden onset and early prostration, accompanied by mental confusion, should, if there is an epidemic, suggest the fever. The congested face and red eyes are also very suggestive. The presence of the rash is of course final, but it may be exceedingly difficult to see in the dark rooms usually the home of typhus patients ; and, again, a good wash is often required before it becomes visible. Many of our cases were sent in as enteric fever, and when the rash is badly developed that is the most natural mistake. To distinguish it from typhoid fever, Widal's reaction is the best method to use if in doubt. There should be little difficulty in distinguishing the disease from measles, the history of or the presence of a rash on the face pointing to the latter. As regards acute lobar pneumonia, the differential diagnosis may be exceedingly difficult. In uncomplicated typhus there is often dullness at the bases of the lungs, but this is not restricted to the limits of the lobe, and tubular breathing is not present. The respirations, moreover, though accelerated, are usually only slightly more rapid than the temperature would account for. Perhaps the most difficult cases of all to differentiate are bad influenzas, and acute rheumatism may have to be remembered. The odour is of undoubted value in diagnosis, as, if it is noticed at all, it cannot possibly be mistaken for anything else. (From Drs. Littlejohn and Ker's paper in the Edinburgh Medical Journal, July, 1899.)

### VARICELLA.—Diagnosis of.

(1) In varicella, pocks in different stages of development—papule, vesicle, pustule, and scab—may usually be seen at the same time within a circumscribed area of skin. (2) If a single developed vesicle can be detected upon any point of the skin which 24 hours previously showed no sign of a developing pock even in its early papular stage, that one vesicle is sufficient to exclude small-pox altogether. (3) The detection of any cicatrices of antecedent varicella (which on careful scrutiny of the surface are to be found much more frequently than is usually credited) is practically sufficient to exclude varicella, so extremely rare is a second attack of that disorder. (From Dr. Foord Caiger's paper in The Lancet, June 17, 1899.)

## AFFECTIONS OF THE NERVOUS SYSTEM.

### APOPLEXY.—Temperature in.

Briefly stated, the chief facts known are—that in cases of cerebral hemorrhage there is an initial fall of the body-temperature; that in rapidly fatal cases this subnormal temperature is maintained, but in others which live for some hours it may be succeeded by a rise to a high level; that in cases which prove fatal after a few days the initial fall is followed by a stationary period of return to the normal or near it, ending in a rise of the temperature before death; and in cases which recover, the temperature after an initial fall and rise returns to normal, or, rather, remains somewhat subnormal for some time. In softening due to thrombosis, there is no initial fall, or it is very slight; the temperature rises, and this is followed by secondary oscillations of considerable amplitude. Dr. Dana called attention to the fact that in cases of cerebral hemorrhage, accompanied with hemiplegia, the temperature upon the paralysed is higher than that upon the sound side, and that in acute cerebral softening from thrombosis or embolism this difference in temperature is not present. He says: "There are exceptions to this rule which I have laid down, but these exceptions are rare, and are to be explained either on the ground that the hemorrhage is very small or the acute softening is very extensive." This difference of temperature on the two sides in hemorrhage may be of practical use in the diagnosis from softening due to thrombosis or embolism. Dr. Dana further says that he has never found any perceptible temperature-disturbance in hemiplegia due to embolism, no matter how severe and pronounced the central disturbance was. (From Dr. Mitchell Clarke's paper in the Bristol Medico-Chirurgical Journal, June, 1899.)

## BULBAR PARALYSIS, ASTHENIC.

The principal features of the affection are as follows: The disease appears usually before thirty, and may occur as early as the age of 12 or 15 years, with perhaps a slight preference for the female sex. It begins gradually and without apparent cause, but there may be quite rapid increase in the symptoms, and it may result fatally within a few weeks. Occasionally, there is at first pain, never very violent, and mild vertigo. An early and most important symptom is the rapid fatigue usually shown in those muscles whose nerve centres are in the medulla, pons and crura. The first symptom may be drooping of the lids and diplopia, or else difficulty in mastication, speaking or swallowing. Involvement of the trunk and limbs usually occurs later, although the disease may begin in these parts. There are seldom muscular twitchings observed even in the tongue. When the disease is fully developed, there is permanent paresis in the upper lids and all the muscles innervated by the seventh nerve, and in the muscles of mastication. In the muscles elsewhere there is great and rapid fatigue after the slightest effort, which, in the later stages, amounts almost to complete paralysis. This is noted especially in swallowing, chewing and speaking, and it is also true of the movements of the limbs. The permanent paresis is found in those muscles which are continually in tonic contraction, and have little rest; that is, in the levatores palpebrarum, the muscles of expression, and the masseters. In some cases permanent paralysis of the muscles of the eyeballs is present, and these are also in constant tonicity; often, however, these muscles are entirely spared. Of the muscles below the head, only those of the back of the neck have been found permanently paretic, the explanation for this being, that they are in the same condition of tonic contraction as the muscles of the lower jaw. Ptosis is often the first symptom, and when the muscles of the eyeballs escape, it is important as showing an involvement of one branch only of the third nerve. Reaction of the pupils to light and accommodation always seems to be normal. The extremities are always involved, but weakness of the muscles of the organs of respiration, if it occurs at all, appears late, and the sphincters have never been found affected. On certain days the patient has more power than on others, but anything causing unusual fatigue or depression impairs the strength of the muscles. For example, in the case related by Wheaton, and in my own case, during the menstrual period the paresis was always greater. Irregularity of the heart's action, and tachycardia are sometimes met with. Sudden relapses are common, and may occur even one or two years after apparent recovery. (From Dr. Wharton Sinkler's paper in The Journal of Nervous and Mental Disease, September, 1899.)

### Bulbar Paralysis, Asthenic.

Dr. Wharton Sinkler laid stress upon the fact that the essential feature of the disease was the rapid fatigue which was shown in the affected muscles when used, and the fact also that there was not complete paralysis of any muscles, but rather a tendency to give out upon use. The intensity of the symptoms varied from time to time, and there were marked periods of remission. The disease began in the intrinsic ocular muscles; ptosis, with or without diplopia, being usually the first symptom. Then the muscles connected with speech and deglutition were affected, and the upper and lower extremities were sooner or later involved. The affection differed markedly from bulbar paralysis of organic origin, in that in asthenic bulbar paralysis there was never muscular atrophy, even in the tongue, nor were fibrillary muscular twitchings observed. There was no complete paralysis of the muscles of the lip. In true bulbar paralysis there was seldom involvement of the third nerve, of the lower facial, or the minor branch of the fifth. The speaker called attention to the liability of mistaking asthenic bulbar paralysis for hysteria in the early stages. (Medical Record, July 12, 1899.)

## CEREBELLAR SYMPTOMS RELIEVED BY TREPHINING.

Dr. L. Guthrie and Mr. Stansfield Collier showed, before the London Clinical Society, a case of tumour of the middle lobe of the cerebellum treated by trephining and drainage. The patient was a boy aged nine, who at present, eighteen months after the operation, is in perfect health except for blindness due to double optic neuritis. Dr. Guthrie observed that the operation ought to have been done a month earlier, for in such a case he believed sight might have been preserved. (Medical Press and Circular, November 1, 1899.)

## CHOREA.—Treatment of.

Dr. S. D. Hopkins of Denver had obtained satisfactory results by the administration of antipyrin according to the method of Dr. J. T. Eskridge. The drug was given in increasing doses, beginning with 1 grain for each year of a child's age and increasing 1 grain each day. In the mildest cases the child was permitted to sit up a part of the day and the antipyrin was only given in the evening. In severe cases absolute rest in bed was required and the dose of antipyrin was given three times a day. As soon as the choreic movements ceased, or greatly diminished, the drug was stopped. Fowler's solution and iron were given until two or three weeks after the cure appeared to be complete. In giving such doses of antipyrin, 20 grains, three times a day to a child eight years old, for instance, certain precautions must be observed. The child must be kept in bed and carefully watched. If there is heart disease, or fever, antipyrin should not be given. The speaker had seen no bad results from its use, and in the nineteen cases upon which his paper was based had obtained rapid cures. (Medical News, September 9, 1899.)

## CONVULSIONS IN CHILDREN.

Drs. Gossage and Coutts make the following remarks in their paper:—All that is necessary during an actual attack of convulsions in most cases is to loosen the clothing about the neck, chest, and abdomen, and to lay the child on its back with the head slightly raised until it recovers consciousness from the fit and the subsequent drowsiness. The placing of the child in a hot bath, as is such a common practice, probably does no harm, and if the child be in feeble health it may be advantageous to use a mustard bath, which has decided stimulating properties. Cases, however, where the unconsciousness is unduly profound and prolonged, and especially if with this further fits are associated, require more active measures. Chloroform inhalation is the most efficacious of these, and profound unconsciousness is no bar to its employment, recovery from the anæsthetic being usually accompanied by regain of consciousness. The inhalation of chloroform may be replaced, or in severe cases followed by the rectal injection of chloral, in doses of 3 gr. to an infant of six months, to which 2 or 3 gr. of potassium bromide can be added if desired. Some authorities have recommended the inhalation of nitrite of amyl in 1-minim doses, and Eustace Smith praises the hypodermic injection of morphine in doses of $\frac{1}{24}$ gr. to an infant of six months, and says that it can be repeated, if necessary, in the course of half an hour. Any local irritation which may be regarded as an exciting cause of the fit calls for appropriate treatment. (British Medical Journal, August 19, 1899.)

## COCAINISATION OF SPINAL CORD.

By the bold expedient of throwing small quantities of very dilute cocaine solution (0·005 – 0·01 gm. of cocaine) directly into the spinal canal, Bier (*Deut. Zeitschr f. Chir.* April, 1899) attacks the nerve-roots and ganglia themselves as well as the non-medullated nerve-trunks before their emergence from the spinal column, and produces satisfactory anæsthesia of the whole body beneath the nipple line. Insensibility is complete seven or eight minutes after the injection, which is done after the manner of Quincke's lumbar puncture, made painless by a preliminary Schleich's infiltration, and continues for about three-quarters of an hour. Strange to say, heat and cold perception and also the touch and pressure senses are preserved, but all impressions of pain are entirely obliterated. Because of this, and inasmuch as it seems incredible that the entire thickness of the large nerve-trunks should be permeable by the solution in so short a time, the inference is drawn that the pain-conducting fibres are placed at the periphery of the nerve-bundle. Bier performed in this way such severe operations as osteoplastic resection of the ischium, knee-and-ankle joints, necrotomy of the tibia, resection of the femur, &c., to the perfect satisfaction of the patients. By experiment on himself and a colleague he also proved that the anæsthesia was absolute and its production unaccompanied by unpleasant sensations. Unfortunately for the vogue of the new method, however, the after effects are quite as undesirable and much more prolonged than those following chloroform or ether, and consist in dizziness, severe headache, nausea, and vomiting. (From a leading article in the Medical News, July 1, 1899.)

## ELECTRIC BATHS.

[The following is taken from Dr. Lewis Jones' notes from the the Electrical Department, St. Bartholomew's Hospital :] Here about a thousand baths are given in the course of the year ; about two-thirds of the total represent baths given to children with infantile paralysis, while the remainder are made up of various classes, chiefly general neuritis from alcoholic and other causes. Rheumatism and rheumatoid arthritis, debility after influenza, or other exhausting diseases, some cases of hemiplegia and of chronic myelitis, are also referred for treatment from time to time. Mercurial tremor and extensive lead palsy also receive bath treatment occasionally. In almost every case the current employed is the alternate current from the mains. Continuous current baths have gradually fallen out of use, by reason of the inferior results which they seemed to give. The sinusoidal current (electric light current) has been shown experimentally to have a more marked influence upon general metabolism than either the induction coil current or the constant current from a battery. Its chief contraindication is pain. Thus the pains of acute sciatica are sometimes made more severe by the sinusoidal current. If that is the case, the continuous current is used, only this is not applied in a bath, but by electrodes placed directly over the painful part with due precautions as to pole, &c. With these exceptions sciatica may be treated by the sinusoidal bath, and indeed we do so treat nine-tenths of our sciatica patients, obtaining very good results. Even those who are at first made worse by the bath treatment are usually put back on to bath treatment at a later stage, when the acuteness of their pain has been partly relieved by direct local applications of continuous current. The infantile paralysis cases are dealt with later. (*See p.* 203). The arm-baths are stoneware troughs of a size suitable for receiving the forearm and hand ; they have small copper electrodes at their ends, and are used by being filled with warm water, the patient immersing one or both forearms. Their value and importance in the department are due to the very large numbers of cases which are sent us with symptoms of some form of paralysis of the nerves of the forearm and hand ; for example, sleep palsy, crutch palsy, paralysis from wounds or injuries at or below the elbow, and double wrist-drop from lead. All such cases as these are easily and thoroughly treated by immersion in the arm-baths, a method which has greatly diminished the drudgery of carrying out the treatment with the numbers of patients we have to attend. (Practitioner, September, 1899.)

## EPILEPSY.—Bromide of Camphor in.

Haslé (*Thèse de Paris*, 1899), after carefully selecting a number of cases of epilepsy from the abundant material at Bicêtre, obtained the following very constant results : (1) As regards epilepsy proper (*haut mal*), the action of bromide of camphor was doubtful, and was less effectual than the mixed bromides of potassium and sodium and ammonium. (2) In attacks of *petit mal*, and in all cases of epileptic vertigo, however, its effect was incontestable ; it at first diminished the frequency of the vertiginous attack, and finally made them disappear altogether. The condition to be observed in prescribing was to begin with moderate doses, made gradually progressive, and lasting for a sufficient time. Owing to its disagreeable odour it is best taken in capsules of 20 centigrammes, or dragees of 10 centigrammes, beginning with two capsules per diem, and augmenting by two capsules the second week, &c., till eight capsules per diem are taken, then as gradually diminishing the dose till two capsules per diem are reached and maintained for some time. (From abstract in Epitome, British Medical Journal, August 5, 1899.)

### Epilepsy.—The Bromides in.

Dr. J. G. Smith thus concludes his article: It would seem that whilst bromide of strontium is in some cases apparently of greater value than bromide of potassium in controlling epileptic seizures, yet on account of the more rapid action of the latter and its more lasting effect, the smaller dose required, and, lastly, its cheapness, bromide of potassium must be regarded as the more generally useful drug in the treatment of epilepsy. (Lancet, August 12, 1899.)

### HEMIPLEGIA, ŒDEMA IN.

The condition of œdema in hemiplegia is a rare one. Gowers states that in hemiplegia slight œdema is often present in the paralysed limbs, and that it may be of greater extent, but mentions no example of its occurrence in any such degree as in this case. On searching the recent literature, I have only been able to find reports of three such cases, one by Hare, of Philadelphia; one by Preobrajensky, of Moscow; and one by Gilbert and Garnier, of Paris. In the first of these the right arm alone was affected. In the second there was extensive œdema, and eventually gangrene of the paralysed extremities, but the case was complicated by aneurysm of the aorta and thrombosis in the vessels of the hand and foot. The last case was exhibited before the Société de Biologie of Paris, as one of hemiplegia with greatly swollen hand, presenting a condition not to be distinguished from the so-called "succulent hand," declared by Marinesco to be pathognomonic of syringomyelia. The patient was still alive when the observation was published. In the first two cases the autopsy showed, in common with the one reported here, that large areas of the brain were affected. There is no satisfactory explanation of the production of the localised œdema, however. Von Monakow makes bare mention of œdema in hemiplegia, though he says that in the early stage there is a tendency to slight swelling and increased warmth of the paralysed limbs, while in the chronic stage coldness and lividity, with glossiness of the skin, are the rule. In speaking of other trophic disturbances in hemiplegia (particularly of muscular atrophy), however, he calls attention to the fact that in every case the brain lesion has been quite extensive, and this seems to have been the rule also in the cases of œdema in hemiplegia which have been reported. The circulation of both blood and lymph is favoured by the action of the muscles; hence, loss of power in the muscles on the one hand, and failure of vasomotor control on the other, would seen to be responsible for the production of stasis and œdema on the paralysed side. As to why this so rarely occurs, however, we have no definite information. (From Dr. C. L. Allen's paper in The Journal of Nervous and Mental Disease, August, 1899.)

## HYDATID DISEASE OF THE SPINAL CANAL.

Dr. Barrs and Dr. Trevelyan, before the Pathological Section of the British Medical Association, 1899, showed a vertebral column with cord *in situ* in which there were numerous hydatid cysts both in the bones and in the extradural space. The patient, a man, aged 52, was admitted into the Leeds General Infirmary under Dr. Barrs, and died with all the appearances of acute myelitis. The cancellous tissue of the vertebræ was found after death to be extensively occupied by minute cysts, and in one of these a scolex head had been demonstrated. Between the dura mater and the bones from the first dorsal to the second lumbar vertebræ there were many cysts of varying size and shape. Similar cysts also lay in some of the intervertebral foramina, but no evidence of hydatid disease was found in the tissues about the spine, nor yet in the other organs of the body. The cord, so far as it had been examined, showed marked disorganisation. Dr. Trevelyan then gave some account of the peculiarities of hydatid disease as it occurs in bone, and referred to the various specimens of hydatids of the spinal canal of which he had been able to find recorded details since Dr. Maguire's paper appeared in *Brain*, 1888. (British Medical Journal, November 11, 1899.)

## HYSTERIA.

When hysteria affects peripheral parts of the body we may have sensory or motor disturbances. Anæsthesia or hyperæsthesia, palsy or spasm, are the symptoms, varying according to the predominance of a condition of irritability or of weakness in the motor or sensory nervous system. Hysterial affections are so manifold that they may be said to simulate almost any organic disease. However widely we may differ as to the theories regarding the disease, we must be entirely agreed as to the chief symptoms. These are :—(1) An altered mental state—above all, an increased emotional condition. (2) Palsies, with or without contractures. (3) Subjective and objective disturbances of sensation (hyperæsthesias and anæsthesias). The latter may appear under the guise of an hemianæsthesia, often involving the special senses, or of a regional, segmental, or "patchy" anæsthesia. (4) Hysterogenic zones. (5) Typical convulsive attacks, occurring at irregular intervals. All these symptoms are variable, and are particularly subject to suggestion by others, or to auto-suggestion. (From Dr. B. Sachs' paper in The Journal of Nervous and Mental Disease, June, 1899.)

## HYSTERIA AND ORGANIC DISEASES.

Zenner (*Cincinnati Lancet*, October 29, 1899) calls attention to the importance of making a correct diagnosis between so-called hysteria and organic disease. The former, as is well-known, may simulate nearly every disorder, and he has observed mistakes made by very competent men. He points out some of the guides to diagnosis, such as the hysteric temperament, the stigmata of the disease and the crises. The peculiar grouping of the symptoms is also a help, and their rapid changes, also the marked influence of mental impression and the power of suggestion. As special symptoms of diagnostic importance, he mentions the globus, the contraction of the visual field, for hysteria ; and hemianopsia, alteration of the deep reflexes, rigid pupils, and the reaction of degeneration for organic nervous diseases. Nevertheless, these are not altogether pathognomonic, and the greatest safety lies in always remembering the difficulties of diagnosis and making painstaking examinations and careful observation. The importance of correct diagnosis in these cases, both for the physician and the patient, is very evident. (Journal of American Medical Association, October 28, 1899.)

## INSANE.—Continuous Baths for the.

(By E. Beyer, *Centralblatt f. Nervenheilk. u. Psych.*, No. 1.) The experience at Heidelberg has been very favourable to these baths or water-beds, transferring the patient from bed in the morning to the bath—temperature, 28 R—and from the tub to bed again at night, with no other procedures or examinations. It is especially beneficial for the rapid curing of decubitus, phlegmons, &c., and is indicated for all uncleanly, restless, destructive or menstruating patients. It has proved invariably successful in mania. No mechanical means are used, but a dose of hyoscin at first may be found useful. Each ward should have its separate bath-room with tub and attendant to each two or three patients. Cells and isolating-rooms will then be found unnecessary. (Journal American Medical Association, September 23, 1899.)

## INSANITY IN CRIMINAL CASES, THE PLEA OF.

While Dr. Allison concedes that the plea of insanity is sometimes resorted to dishonestly and as a mere subterfuge in behalf of sane villains, he thinks that, on the whole, the plea ought to be set up oftener than it is, for, if it was shown to be well founded, the individual, although acquitted of criminal responsibility, would be committed to proper care, and society would be protected rather than endangered, as it would be by his release after a specified term of penal imprisonment. The popular contempt for the plea is no doubt based largely on distrust as to its genuineness, but, except in a small percentage of doubtful cases, this can always be ascertained to the satisfaction of the court and the jury. The popular opposition to the plea as a bar to execution or penal servitude is probably due in great measure also to the fear that its admission may deprive the trial and its result of the deterrent influence that the condign punishment of offences is supposed to exert and doubtless does exert upon sane persons of vicious and criminal tendencies ; in other words, the fear that other offences may be encouraged if one offender is sent to an asylum rather than to the gallows or a prison. This is a practical view of the matter, one wholly free from unfounded distrust on the one hand and from morbid sentiment on the other ; but it is met by the inevitable conclusion to be drawn from the facts presented by Dr. Allison and others to the effect that the community is protected against an insane criminal only for a time if he is sentenced to a specified term in prison, but is left defenceless against him on his release. We repeat, "there should be no known lunatics at large." (From a leading article in the New York Medical Journal, September 9, 1899.)

## INSANITY, POST-OPERATIVE.

As regards the type of insanity the most common is a transitory form of acute mania with mental confusion and hallucinations. This is a different condition from the delirium which may appear in an alcoholic patient after an injury or an operation. This is delirium tremens pure and simple. Of 163 cases described by Simpson in his monograph, 67 are put down as mania, 45 are melancholia, 26 as acute confusional insanity with delusions, 10 as dementia, 8 as alcoholic, and 4 as hysteria, so it is evident that any form of insanity may be a sequel to surgical interference. The age would appear to be in the large majority of cases over 40 years ; in 29 cases 11 were under the age of 40, the other 18 were from 40 to 73 years. The age is important so far that this sequel occurring in middle age indicates cerebral malnutrition. So the older the patient the more chance of developing mental disorder. The sex must be considered, because there is no doubt that mental disorder is more frequent after gynæcological than after general operations, so there would appear to be a large preponderance of females affected ; but if gynæcological procedures be excluded there is little difference between the sexes. Thus, out of 167 cases, 102 were women, but 60 were gynæcological operations. In 41 ophthalmic operations 25 were men and 16 women. Simpson has collected 124 cases, of whom 102 were females, and of these 95 were sequent to gynæcological operations. Hereditary tendency, and the mental type of the individual operated upon are also of importance. Alcoholic habit would predispose to insanity as well as to delirium tremens, which is left out of consideration here. (From Dr. Rutherford Macphail's paper, British Medical Journal, September 23, 1899.)

## INSOMNIA OF THE INSANE.—Treatment of.

The sleeplessness of the insane requires careful management. In the early stages of acute mania the bromides, chloral, hyoscine hydrobromide, and other sedatives are useful, but a hot bath at a temperature of 104° F. and cold water simultaneously poured upon the head are most efficacious in inducing sleep. In melancholia, where arterial tension is usually high, paraldehyde in doses of from 40 minims to 90 minims or even more is a valuable hypnotic, and so is morphine, but a 1-grain dose of erythrol tetranitrate by reducing arterial tension will frequently act better than anything else. In mild cases of delirium tremens sleep usually comes on after a time whatever treatment be adopted; in the more severe cases chloral and bromides, alone or in combination, are beneficial. Paraldehyde is recommended by some physicians. Opiates may be given, but in most cases hyoscine is probably a more efficient remedy. Among the medical officers of the American army 20 grains of powdered capsicum in the form of a bolus is the favourite hypnotic for this complaint. I have had no practical experience of this prescription and cannot therefore express any opinion of its value as a mode of treatment. Cerebral depressants should be given as little as possible and the treatment should be confined chiefly to feeding and tonic measures. (From Dr. J. B. Bradbury's Croonian Lecture, Lancet, July 15, 1899.)

## KNEE-JERKS IN GROSS LESIONS OF BRAIN.

The object of my note is to draw attention to the fact that, in tumour and abscess of the præfrontal region of the brain the knee-jerks are sometimes lost. In such case, there is usually nothing to account for the loss of the knee-jerks, except the lesion of the præfrontal region. The knee-jerks were lost in three out of five cases of tumour or abscess of the præfrontal region which I recorded in 1896. Thus, apparently in tumour or abscess, in two regions of the brain especially—the cerebellum and the præfrontal region—the knee-jerks are sometimes both absent; whilst in tumour or abscess in other parts of the brain, loss of the knee-jerks is exceedingly rare. (From Dr. R. T. Williamson's paper in the Glasgow Medical Journal, November, 1899.)

## MENINGITIS, ACUTE STREPTOCOCCAL, IN CHRONIC PARENCHYMATOUS NEPHRITIS.

Dr. Rolleston described the case of a man, aged 22 years, admitted on the eighth day of his illness with a temperature of 103°, but without any definite evidence as to the nature of his illness, which had begun with tonsillitis. He was quite free from headache on admission, but the next day had two fits, passed into a condition of cerebral irritation, and died within 24 hours. The autopsy showed extensive purulent meningitis, due to streptococci infection, and an acute nephritis on the top of chronic parenchymatous nephritis. No streptococci were visible in microscopic sections of the kidney, so the acute renal changes may have been toxic. But, inasmuch as cultures were not made from the spleen or heart's blood, it could not be certainly said that the streptococcal infection was confined to the meninges of the brain. Terminal infections in renal disease were known to be common in the lungs, pleura, and pericardium, but not in the meninges. In Flexner's statistical study of terminal infections in chronic heart or kidney disease, the few cases of meningitis that occurred were almost always due to pneumococci. Flexner had shown that in chronic renal disease the bactericidal power of the blood was diminished, and that terminal infections were therefore very liable to occur. This case was remarkable for the unusual site of the terminal infection, and for the latency of the meningitis. The tonsils were possibly the source of infection. (Medical Press and Circular, October 18, 1899.)

### Meningitis.—Bacteriology of.

(Dr. Washbourn, *The British Physician*, July 15, 1899, p. 3.)—Referring to the meningitis due to the pneumococcus and to that due to the diplococcus intracellularis meningitidis of Weichselbaum, Washbourn points out that the former is usually secondary to pneumonia, the cocci being probably conveyed to the meninges by the blood stream or directly from the nose, whilst the latter is either a meningitis of the epidemic cerebrospinal form or the posterior basal meningitis of children described by Still. The pneumococci and diplococci have, he thinks, been confused by several observers, but are in reality quite distinct; the former are often lanceolate and mostly arranged in chains, they are normally provided with a capsule; they stain with Gram's method; their colonies are small and discrete; they quickly lose their vitality; they are very virulent to mice and rabbits, but only slightly so to guinea-pigs. The diplococcus intracellularis, on the other hand, is not lanceolate; the arrangement is never in chains, it is not provided with a capsule, it does not stain with Gram's method; its growth is fairly luxuriant, it retains its vitality for a long period; it is only slightly virulent to guinea-pigs and hardly at all to rabbits. (Quarterly Medical Journal, November, 1899.)

### Meningitis, Cerebro-Spinal.—Antistreptococcic Serum in.

May D., a strong robust girl of 15 years, was taken sick on April 28, 1899, and I was called to see her on the morning of the next day, at 5 a.m., when I found her suffering with intense pain in the head, which she described as "throbbing pains"; neck rigid; head thrown back; temperature 101° F.; pulse 120; pupils dilated; and all the other symptoms of the disease. The patient very soon after this became unconscious, and the pulse very variable, ranging in an hour from 50 to 120, and was different every time it was counted. Dr. J. P. Lewis, of Topeka, was called in consultation, and by 11 a.m. we began the use of the antistreptococcic serum, giving ten cubic centimetres at that time hypodermically, and another injection of the same amount at 4 p.m. of the same day. The next morning the patient was semi-conscious, and ten cubic centimetres was again given. On the third day the serum was used, the mind at this time being perfectly clear. On the fourth day the fourth dose was administered, and on the fifth day the fifth dose, with a constant and marked improvement, so that on the sixth day the serum was omitted. On the seventh day, the right knee-joint being badly swollen and painful, ten cubic centimetres of the serum was injected into the lower limb near the knee. Previous to this I had injected it into the subcutaneous tissue of the back, over the scapula. In a very few hours after this last injection the pain disappeared, and the swelling of the knee subsided. From this time on recovery was rapid and uninterrupted. (From a letter by Dr. W. L. Warriner, Therapeutic Gazette, July 15, 1899.)

### Meningitis.—Kernig's Sign in.

Herrick gives a thorough discussion of this phenomenon, considered by Kernig as characteristic of pial inflammation and always present in such conditions. It is described as follows:—If a patient with meningitis is made to sit up, as on the edge of the bed, the thigh being, therefore, at right angles with the back, it is extremely difficult to extend the leg because of the presence of a marked flexor contraction. In 19 cases observed by Herrick, this sign was present in 17, and in the two where it was absent, both children, the single examination was made shortly before death, when there was a general marked laxity of all muscles. It may have been present earlier. In 100 cases of disease other than meningitis, it was present only in two.

No satisfactory explanation of this phenomenon has been offered, and Herrick does not attempt to explain it other than by saying that there is probably such increase in tone as to exaggerate the natural difficulty of extension to actual flexor contraction. (Journal American Medical Association, July 15, 1899.)

**Meningitis.—Kernig's Sign in.**

This subject is dealt with in the editorial article in *La Riforma Medica*, July 28, 1899. In 1884 Kernig found that in patients suffering from meningitis there was great difficulty in extending the leg when told to get out of bed, the thigh remaining flexed at right angles to the pelvis. This condition, according to the author, was almost constantly found in affections of the pia mater, and not in healthy subjects or in other diseases, so that it becomes of value in the differential diagnosis. When the patient is lying in bed, this flexion completely disappears. Kernig's observations were founded on 15 cases of affection of the pia mater, in 8 of which the diagnosis was confirmed post mortem. Firis, of Copenhagen, confirmed the existence of Kernig's sign in 53 out of 60 cases, and other observers have also noticed its presence. No very satisfactory explanation of the sign has been offered. (Epitome, British Medical Journal, September 16, 1899.)

**NERVES.—Prognosis in Injuries of.**

All cases of nerve-stretching recover, of that there is no question; and in the older text-books on surgery, where you see that there was remarkable atrophy of the deltoid following injury to the shoulder, you will find it stated that the parts were paralysed for a long time, and then recovered. In nerve-stretching cases recovery takes place always, and within a reasonably short time, say six months or so. But it is in the cases of contusion that I think perhaps most doubt exists; and I am speaking now of having to give an opinion without an operation. I think you can only decide a case on its own merits. Of course, where you have a contusion from a bullet, like a case of contusion of the sciatic nerve, most would probably assume that the bullet had gone through the nerve. Therefore, you will perhaps be wise not to give an opinion at all until you have done an exploratory operation. As regards contusion, I think if there is the least ground for assuming that the nerve is not divided, you may promise ultimately complete recovery, but at a very long interval, perhaps four or five years. Then we come to division of nerve. It goes without saying that where you have the nerve divided in a fixed scar you will get no recovery whatever until you have taken away the scar and sutured the nerve. (From Mr. Victor Horsley's paper in The Practitioner, August, 1899.)

## NEURALGIA.—Treatment of.

Chloride of ammonium is a valuable drug in neuralgia, especially neuralgia of the fifth nerve. Here again it is necessary to give large doses in order to get the best results. A favourite prescription for neuralgia of the fifth nerve is: Am. chlorid, ½ dr.; tinct. gelsem., 7½ m.; tinct. aconit., 1 m.; Ext. glycyrrh. liq. 1 dr.; Aq., ad 1 oz. To be taken every hour when the pain comes on till three doses are taken. If the medicine has done no good after the third dose, it must be abandoned altogether. In successful cases, some relief comes shortly after the first dose, the pain entirely disappearing after the second or third. When we are especially anxious to get a speedy effect we may add a small dose of morphia. Chloride of ammonium must be given in large doses and at short intervals. (From an original article, "Observations in the Treatment of Nervous Diseases," in Treatment, August 10, 1899, p. 339.)

## NIGHT TERRORS.

The following are Dr. Graham Little's conclusions:—(1) Night terrors are in the great majority of cases caused by disorders productive of moderate but prolonged dyspnœa. (2) A preponderating number of cases are found in rheumatic subjects with early heart disease. (3) A considerable proportion of cases are due to obstruction of nasal cavities and fauces. (4) Digestive disturbances do not play the important part in causation that is often assigned to them. (5) The evidence for their causal connection with epilepsy or allied neurosis is scanty. (6) The attacks occur in the subconscious stage of early sleep, and are confined to young children under puberty. (Pediatrics, October 18, 1899.)

## PARALYSIS AGITANS.

Dr. Williamson made an instructive communication to the Manchester Therapeutical Society on the palliative treatment of paralysis agitans. He was of opinion that by appropriate remedies much might be done to relieve the persistent trembling. Sound sleep was a first essential, as beyond doubt sleeplessness served to aggravate all the symptoms. To this end he recommended sulphonal or hot whisky and water at bedtime. Alcohol and even strong tea or coffee during the day appeared to increase the trembling. Writing or needlework, or even holding the arms above the head, was of some temporary benefit; so also the warm bath. Systematic open-air treatment by whatever means most convenient to the particular sufferer should be rigidly insisted upon. Dr. Williamson had tried strychnine, arsenic, potassium iodide, potassium bromide, calabar bean, gelsemium, and cannabin tannate with no benefit. Morphine hypodermically is beyond doubt of great value, but should of course be avoided in a disease of such chronicity ; but morphine or duboisine by the mouth seemed comparatively ineffectual. Hyoscine, however, appeared to be the drug of greatest value. Dr. Williamson gave as much as $\frac{1}{96}$ of a grain of hyoscine hydrobromate at a dose ; he had started with $\frac{1}{200}-\frac{1}{250}$ grain in pill form, but had found such small doses useless. He now gave the larger dose in solution—two teaspoonfuls of a mixture of one-fourth grain of hyoscine hydrobromate in six ounces of chloroform-water. The dose could be increased to $\frac{1}{75}$ grain without fear. Dr. Leech was of opinion that so large a dose as $\frac{1}{75}$ of a grain might be given by the mouth, but hypodermically would almost certainly be attended by alarming symptoms. Hyoscine seemed to relieve the muscular restlessness and tremor. Tolerance for the drug is usually established in the course of a few weeks, when it is better temporarily to abate the remedy, and resume it at a later period. (From the London Letter in the Therapeutical Gazette, August 15, 1899.)

**Paralysis Agitans.**

(From Drs. Collins and Muskens' paper.) The drugs that are in use for paralysis agitans, and from which some benefit in dissipating symptoms and fulfilling pointed indications may be expected, are hyoscyamus and duboisine, Indian hemp, opium, hæmatogenous agencies, such as arsenic and iron, and occasionally gelsemium and veratrum viride. Of these, the most important by far are the two first mentioned. Given hypodermically, which is the preferable way when possible, or by the mouth, they promptly mitigate the severity of the tremor, and have a pronounced tendency to relax the muscular rigidity. They are both powerful toxic agencies, and must therefore be given with care. Hyoscyamus (hyoscine hydrobromide, one one-hundred-and-twentieth to one-eightieth of a grain) is said to have more advocates than duboisine, but, personally, we much prefer the latter. Its administration is not so apt to be attended by disagreeable symptoms, while the effects are coequal. The sulphate of duboisine should be given in from one one-hundredth to one-sixtieth of a grain, two or three times daily. On the accession of vertigo, cephalic paræsthesia, disturbance of vision, nausea, dryness of the mouth and tongue, it should be stopped at once. In many instances the administration of either of these drugs is followed by almost complete cessation of the tremor for a shorter or longer time, but usually for several days. Unfortunately, they apparently have slight effect in mitigating sleeplessness, amyosthenia, and the feeling of unrepose that so many patients complain of. (New York Medical Journal, July 8, 1899.)

## PARALYSIS, SPASTIC.—Surgical Treatment of.

Dr. B. E. McKenzie, of Toronto, stated that according to his observations in more than 60 per cent. of these cases there had been deficiency in intellect. They could be divided into three groups, viz.: (1) Those due to parental conditions, (2) those occurring after birth, and (3) those dependent upon trauma occurring subsequently. Until the time had arrived when a child could sit erect and show some disposition to balance the trunk on the extremities, nothing could be done in the way of surgical treatment. The spastic state of the abductors, the hamstrings, and the muscles controlling the feet offered an insuperable obstacle to walking. It had been his practice to cut the abductors and then abduct the limbs so as to place them at an angle of from 60° to 90°, and retain them in this position for several weeks. In no case had there been any return of the contractures. By such treatment patients that had no prospect of ever walking at all could be made to walk quite readily and nicely. Massage should be practised for years after operation. (Medical Record, September, 1899.)

## PARALYSIS, SUBACUTE ATAXIC, ASSOCIATED WITH ANÆMIA AND TOXÆMIA.

There is a class of cases of spinal-cord disease, characterised by symptoms of numbness, ataxia, and paralysis, involving the legs and then the arms, progressing at first slowly and then rapidly, and ending in one or two years, to which the name of "subacute spinal paralysis" may be given. The cause is not known, but the trouble is due, beyond much question, to some form of toxæmia. It is more often associated with pernicious anæmia or profound secondary anæmia than with any other single condition. It is seen after profound malarial and lead intoxication. It occurs usually in middle life or later, and oftener in woman than in men. It resembles light grades of multiple neuritis, such as are due to arsenic or diabetes ; on the other hand, it resembles somewhat locomotor ataxia in its earlier stages. It is to be recognised mainly by the presence of anæmia or cachexia, the age of the patient, the progressive and rather rapid character of the symptoms, absence of much pain or tenderness over the nerves, and the absence of eye symptoms and of the visceral symptoms of locomotor ataxia. The pathological anatomy consists in a progressive degeneration, involving most the posterior columns, and to less extent the lateral columns of the spinal cord, and later the gray matter and other parts of the white matter. At the beginning the disease is systemic, affecting, however, the cervico-dorsal part of the cord more severely, as a rule, but usually developing two or three specially marked foci of degeneration lower down in the cord. Pronounced changes in the blood-vessels sometimes accompany the degeneration, which is non-inflammatory and often ends in softening. The treatment of the disease is always ineffective in the later stages. In the earlier stage the trouble may be helped by the use of arsenic, quinine, tonics, proper feeding, and the use of saline injections. (From Dr. C. L. Dana's paper in Medical Record, June 29, 1899.)

## PUNCTURE, LUMBAR.

Since Quincke drew attention to the diagnostic importance of an examination of the cerebro-spinal fluid, lumbar puncture has been performed in a considerable number of cases, and not infrequently with a positive result. Among the organisms that may be found may be mentioned tubercle bacilli, the diplococcus intracellularis, streptococci, Fraenkel's pneumococcus, and staphylococci. With a positive result the diagnosis is established, but unfortunately in many cases of even purulent meningitis the fluid is perfectly limpid and free from pus and organisms. This is, however, what might be expected as the effusion is usually in the sub-arachnoid spaces, and therefore a negative result is of no value. Some have even claimed considerable therapeutic value for the operation, but the beneficial results seem to have been usually more imaginary than real. The inflammatory effusion for the greater part is in confined spaces, and not floating freely in the cerebro-spinal canal. Where there is an accumulation of inflammatory fluid in the ventricles of the brain, the foramen of Majendie is generally closed, and the fluid cannot escape into the general arachnoid cavity. (From Dr. J. Barr's paper in the British Medical Journal, November 18, 1899.)

### Puncture, Lumbar, in Cerebro-Spinal Fever.

Has the lumbar puncture any therapeutic value? Williams, of Boston, states that he has seen beneficial effects, and there are a few cases in the literature in which the severity of the symptoms were promptly mitigated by the removal of a variable amount of the spinal fluid. Wentworth (whose experience has been very large), speaking of these cases, says: "I have never seen any such cases, though constantly on the watch for them. A temporary relief, lasting for a few hours, has followed the operation in a few cases, but the same remissions frequently occur without any treatment." Netter says that he has seen convulsions, which had lasted for a long time without intermission cease after the withdrawal of only about two drachms of fluid. We have given this point our closest attention, and many times have performed the puncture directly for its supposed benefit. In one case the note reads: "Much better after the first puncture;

brighter every way." In another case : Patient's condition has greatly improved ; the muttering has ceased, and the irregular movements are less marked." (From Dr. Osler's Cavendish Lecture, London Medico-Chirurgical Journal, June 16, 1899.)

## SECONDARY SYPHILIS, NERVOUS AFFECTIONS IN.

Fournier (*Journ. de Méd.*, April 10, 1899) describes some of the results of secondary syphilis, which are difficult to diagnose in the absence of distinct history, and from the fact that they are much more frequent in women than in men. (1) Headache, which the author divides into three degrees. In the first it is troublesome, but does not interfere with the ordinary avocations; in the second, this pain stimulates almost absolutely migraine ; in the third, the pain is so severe as to render any exertion or employment impossible. It is accompanied by vertigo, ringing in the ears, and in many cases there may be a profound melancholia. The pain may be constant or intermittent. In the first it is more severe towards the evening ; in the second form it comes on every evening between five and seven. This form of headache may last for periods varying from several days to several months. (2) Insomnia, which, like the last, is hardly ever met with except in women. In many instances this may be due to the pain already described, but in other cases there may be no headache or other symptom. The patient may pass several nights without sleeping. (3) Asthenia. Like the other two symptoms, it is almost confined to women. It may be so marked as to cause total inability to follow the ordinary avocations of life, and in extreme cases may give rise to utter prostration. There may be inability to stand, or even to leave the bed. The heart-beats are extremely feeble and the pulse almost imperceptible; the digestive system becomes markedly torpid. There is a dulness of perception affecting all the senses, and trophic functions are greatly in abeyance. The writer says that this symptom, though more common than the other two, is apparently more frequently misunderstood. Thus, malignant disease, tubercle, different forms of anæmia, &c., have been diagnosed. Of all these, tubercle seems to be the most frequent mistake, on account of the sweating, wasting, and even slight pyrexia ; but the absence of physical signs should prevent such an error in diagnosis. Antisyphilitic treatment is rapidly followed by satisfactory results. (4) Neuralgia, which may affect the sciatic or different branches of the fifth nerve. When this last is the case, it is generally the supra-orbital branch. Fournier points out the importance of trying antisyphilitic treatment, more particularly preparations of mercury in cases of anomalous neuralgic pain. (Abstract in Treatment, November, 1899, p. 585.)

## SPINAL CORD.—Treatment in Injuries of.

Dr. Percival R. Bolton thus concludes his article :—It appears that—(1) Extradural hemorrhage does not give rise to cord lesions or symptoms, and requires no treatment. (2) Total lesions of the cord are irremediable, because the cells and fibres of the entire thickness of the cord are destroyed, are never regenerated, and are replaced by cicatricial tissue. The lesion thus is permanent, and requires no treatment. (3) In hæmatomyelia the clot is absorbed ; its site persists as a cavity or is filled by newly formed tissue ; irregularities of circulation in the surrounding portions of the cord adjust themselves. There may be great amelioration of the symptoms. There is therefore no therapeutic indication, and no remedial treatment is possible. (4) In partial contusion of the cord the lesion results in permanent destruction of cells and fibres ; disturbances of circulation adjust themselves. Repair is accomplished by cicatricial tissue. No treatment is available. (5) In open injuries of the cord there are destruction of cells and fibres, and disturbances of circulation. In addition, infection may occur, or a foreign body be introduced and left in or lodged against the cord, and by its continued presence produce great disturbance of circulation and consequent extensive degeneration and necrosis of cells and fibres. Repair occurs by cicatricial tissue as before. But here active operative interference is indicated to remove foreign bodies, to facilitate disinfection, to prevent more extensive necrosis, and to facilitate drainage. (Annals of Surgery, August, 1899.)

## SPINE, NEUROTIC.

(From Dr. Henry Ling Taylor's paper.) Neurotic spine is a weak back associated with certain general and local symptoms. The patient tires easily, and often is able to walk but short distances, sometimes not at all. There is a great deal of backache, particularly in the lower part of the back, and there are usually distinct points of tenderness over certain spinous processes ; such spots may be found just below the occiput, between the shoulders, and in the lumbar region. Pressure on these points may give rise to a feeling of nausea. It should be borne in mind that in disease of the vertebra there is practically never localised spinal tenderness, and that the characteristic pains of Pott's disease are in front or at the sides. In neurotic spine there is often tenderness over the sacroiliac synchondroses, over the iliac crests, in the iliac fossæ and elsewhere. This tenderness is often a sensitiveness to slight contact. Jolting, sneezing, and coughing do not usually hurt these patients as they do kyphotics, and the characteristic attitude is absent.

Spinal support is contraindicated in neurotic spine. Sometimes a light application of the cautery to the back produces an excellent effect. In order to effect a radical and permanent cure, it is usually necessary to improve the patient's nutrition and morale, get them interested in something outside of themselves, and systematically train the muscles. (Pediatrics, November, 1899, p. 447.)

### TABES DORSALIS.—Balneotherapy in.

Gräupner, of Nauheim (*St. Petersburger Med. Wochenschr.*, 1899, No. 19), is convinced of the value of baths in the treatment of tabes, and refers to the similar opinions of Erb, Von Leyden, and Eulenburg. Moebius, on the other hand, questions the value of the baths, though he considers the rest at health-resorts as useful to the patients. Gräupner knows of patients who have certainly suffered from tabes fifteen years, and who undergo a course of baths every other year because experience has taught them that their condition becomes worse if the balneotherapeutic treatment is put off to the third year. Fatigue and overwork doubtless play a part in the production of tabes dorsalis, and any over-exertion by baths and exercises has carefully to be avoided in the treatment of the disease. Gräupner considers it evident that the treatment by exercises can only be carried out in the case of strong constitutions, and he maintains that it is the place of balneotherapy to raise the general vitality of patients. In regard, however, to combined treatment by baths and exercises, it must be remembered that directly after a bath a patient may be fatigued. The author directs attention to the observation that in cases of tabes paralysis of the urinary bladder is certainly diminished during a course of baths. "Functional cure," lasting a certain period, is possible in the following clinical group of tabes cases. The class of cases includes men and women between thirty and forty years of age, with not much objective disturbance of sensation, but with decided ataxy and with acute attacks of pain; the plantar reflex in such cases is usually increased. Under treatment the paræsthesia disappears, the general nutrition and feeling of strength are greatly increased, and in the course of a few weeks the ataxy, which in these patients Gräupner thinks is partly of functional origin, is got rid of. (From Dr. Parkes Weber's abstract in Treatment, July 13, 1899, p. 291.)

### Tabes Dorsalis.—Genito-Urinary Symptoms in.

All cases of sexual importance dependent upon defective erection or other motor weakness should excite the suspicion of tabes. It is often an early symptom. Diminished sexual desire may also be present. When importance from motor weakness is present, it will often be found that analgesia of the testicle and scrotum in some degree also exists (Pitres's sign). Bittot and Sabrazes, Tartarschuff and Marinesco confirm Pitres as to the frequency and importance of defective sensibility of the scrotum and testicle as an early sign in locomotor ataxia. This symptom is variable, and return of sensibility in the testicle is often coincident with renewed sexual vigour. Some derangement in the vesical function may first attract attention to the possibility of tabes. (Erb's table, 80 per cent.) Slight incontinence, or more frequently some tardiness or difficulty in emptying the bladder, may lead the patient to seek medical advice. Obstinate constipation is common in the established disease, but is valuable only in association with other symptoms in the early stages of the disease. (From Dr. Pritchard's paper in the New York Medical Journal, July 22, 1899.)

### Tabes Dorsalis.—Treatment of.

One method of treatment is to put the patient to bed and give hypodermically rather large doses of strychnine and small doses of morphine. The dose should be very small at first, and very slowly and cautiously increased. For example, at first gr. $\frac{1}{60}$ at each dose, twice daily, should be given, and at the end of the third week it should be increased to gr. $\frac{1}{20}$ at each dose. These doses should be gradually reduced again until the treatment was stopped altogether at the end of six weeks. This course should be repeated three times a year. Strychnine was a useful but at the same time a dangerous drug, sometimes aggravating or causing a return of the pains. It should not be used in the acute and rapidly progressive cases. It was much more easily used when guarded with morphine. He had not seen any evidence that ergot, arsenic, aluminium, barium, or gold did any good. Hot baths were dangerous, and the best form of hydriatic treatment for tabes consisted in daily lukewarm baths for ten minutes at a time, sometimes followed by cool affusion. It was better, he thought, for the patients to have such treatment at home rather than to go to health resorts and meet other tabetics from whom they would learn about much of the misery in store for them. The method of treating locomotor ataxia devised by Fraenkel had been tried for a number of years, and had proved to be of some use. In the third stage only symptomatic treatment was indicated. It should always be remembered that in a chronic malady like locomotor ataxia the mental attitude of the patient was exceedingly important, and that he who could best keep up the fight would do best in the end. (From Dr. C. L. Dana's paper, Medical Record, October 28, 1899.)

## Tabes Dorsalis.—Varieties of.

(By Adamkiewicz, *Berl. Klin. Woch.*, June 5, 1899). In concluding a communication on traumatic tabes, Adamkiewicz makes the following classification : (1) The usual and most common form of tabes is that attended with primary parenchymatous degeneration of the posterior columns, with ataxia of progressive character, and grossly preserved muscular vigour. Its origin is unknown and it is incurable. (2) Traumatic tabes, which agrees with the preceding in its anatomic basis and its incurability, but is distinguished by its genesis, which is always traumatic, and by its stability, as compared with the progressive character of the former. (3) Syphilitic tabes, which originates in the vessels of the posterior columns, which are especially predisposed to syphilitic changes by reason of their peculiar arrangement. This variety occurs in two forms : (*a*) As acute syphilitic tabes it depends on endarteritic processes, and like these is curable. (*b*) Chronic syphilitic tabes, on the other hand, depends on interstitial changes in the posterior columns, and is thus stationary and incurable. Both forms of syphilitic tabes are characterised by motor weakness, ataxia, slight—in the acute form—or entirely wanting—in the chronic form, and absence of sensory disturbances. The knee-jerks are wanting in all forms of tabes, but in the acute syphilitic variety they may be variable. (Journal of the American Medical Association, August 12, 1899.)

## TUMOURS, CEREBRAL.—Operative Treatment of.

I have collected 514 cases, excluding the 38 reported by Ferrier, a very large proportion of those on record. Of these I have classified 68 (13·2 per cent.) as palliative operations, some of which may more properly be regarded, perhaps, as cases of mistaken diagnosis. In 45 cases (8·7 or 10 per cent., according as we include or exclude these palliative operations from the total number) the growth existed at the point of operation, but it could not be removed. In 111 cases (21·5 or 24·8 per cent.) it was not found. In 290 cases (56·4 or 65 per cent.) it was found and removed, but in at least 57 of these cases (11 or 12·7 per cent.) the growth was of such a character that it could not be wholly removed. We see, therefore, that in only about one-half of the cases operated upon has it been possible, with our present knowledge and skill in technique, wholly to remove the growth. Assuming that 16 per cent. of all cases seem operable we can therefore hope to find and wholly to remove the growth in about 8 per cent., the same proportion that autopsy records show as operable. (From Dr. Philip C. Knapp's paper in the Boston Medical and Surgical Journal, October 5, 1899.)

## AFFECTIONS OF THE CIRCULATORY SYSTEM.

### ANGINA PECTORIS.—Treatment of.

(By Dr. Lauder Brunton, *Encyclopædia Medica*: edited by C. Watson, M.B.). In cases of true angina, the author points out how necessary it is that the patient should avoid any sudden exertion or strain. During an attack the best way of cutting short the difficulty of breathing and pain is to let the patient inhale some nitrite of amyl. Hot applications should also be placed to the hands and feet. Nitro-glycerine is more convenient than nitrite of amyl, and acts almost as well. The patient should keep the tablets in his pocket, "and as soon as the pain comes on should begin to nibble one. If the pain be acute he should break it up quickly in his mouth and swallow the whole. If the pain is not very acute, he may take only a part of one, instead of a whole tablet." Nitro-erythrol "has a somewhat similar but more permanent action, so that half a grain of it may be given three times a day with great advantage as a prophylactic." (The full name of this substance is tetra-nitro-erythrol or tetra-nitro-erythrine: for brevity the name tetra-nitrin is used.) It may be given in tablets like nitro-glycerine, each tablet containing half a grain of tetra-nitrin. The drug which of all others is the best for removing the cause of the attacks of angina pectoris is iodide of potassium (5—15 grains three times a day). A good plan is to give it for ten days or a fortnight at a time, and then to discontinue it and afterwards to commence again. (Dr. R. T. Williamson's abstract in the Medical Chronicle, November, 1899.)

### AORTIC DISEASE.

It may be stated that there are mainly two forms of chronic disease of the aortic valve in adults. In one the disease is associated with disease of the aorta, and in the other the aorta is almost invariably healthy. In one the aortic segments are thickened and deformed by the presence of increase of fibrous tissue, but calcareous changes are absent; in the other there is little or no fibrous tissue, but great deformity due to calcareous deposit. In one, again, the disease seems to be an extension from the aorta, in the other it appears to arise primarily in the segments of the aortic valve. It may be added that one disease generally produces aortic regurgitation, unassociated with any stenosis, but the other almost invariably produces stenosis, which is not infrequently uncomplicated by regurgitation. It may be worthy of mention here, that my experience does not enable me to agree with those who doubt the existence of uncomplicated aortic stenosis. I have met with no less than seven cases. The etiology of these diseases is obscure. If the first-mentioned disease is secondary to aortitis, then the cause must be that of aortitis. That syphilis plays some part in the incidence of aortitis, few pathologists doubt, but whether it is alone responsible is open to question. My own experience would lead me to believe that syphilis is merely a predisposing cause. Early aortitis of the nodular type may occasionally be met with in patients who are too young to have contracted syphilis, and in my experience the worst examples of aortitis have been met with in sailors or soldiers who have been to the tropics. I have met with one case of gumma of an aortic segment. It was in a man aged 38 years, who died of nephritis secondary to urethral stricture. There were only two aortic segments, and in the right there was a nodule the size of a pea, composed of fibrous tissue with a caseous centre. The liver contained two small gummata and five or six scars of others; and two gummata of larger size were present in the spleen. The etiology of the calcareous form of disease of the aortic valve cannot be described as clear. Syphilis, gout, alcoholism, Bright's disease, and hard work, all find a place in text-books of medicine as causes, but I am not aware that such statements rest upon any satisfactory basis. The frequency of the occurrence of calcareous changes, where there are only two aortic segments, possibly lends some support to the view that mechanical strain plays a part in the production of the disease. One would think that friction must be greater during systole, and the arterial tension not so easily supported during diastole, with two segments as with three. But mechanical strain can do little or more than predispose to the disease. We have seen that, when once started, the disease tends to invade surrounding structures, and this feature suggests that some locally infective process is at work. (From Dr. Theodore Fisher's paper in Edinburgh Medical Journal, November, 1899.)

## AORTITIS, MALARIAL.

M. Lancereaux appears to have discovered a new disease of the aorta. At a recent meeting of the Paris Academy of Medicine (*Indépendance Médicale*, July 5), he reported that he called it malarial, not only because it was met with almost exclusively in persons who had had attacks of intermittent fever and lived in malarious countries, but also because of its special features. It was encountered in subjects between thirty and sixty years of age. It had its seat in the ascending portion of the arch of the aorta. It began in the outer coat, which became congested and thickened, and from that it spread to the middle coat, and finally to the intima, which became thickened and affected with elevated patches. Among the consequences of these lesions he had observed inflammation of the adventitia, which might extend to the nerves of the cardiac plexus and occasion angina pectoris, also destruction of the middle coat leading to the formation of sacciform aneurysms. He described the course of malarial aortitis as very slow, and said that it did not begin until several years after the infection. It was necessary to distinguish it from arteriosclerosis and from syphilitic arteritis. The prognosis was grave, and the affection often terminated in sudden death. The preventive treatment consisted in a strengthening regimen and hydrotherapeutics; the curative, in the use of potassium iodide and milk. The angina pectoris was to be treated with calmatives, and aneurysm with subcutaneous injections of gelatin. (New York Medical Journal, August 5, 1899.)

## BRADYCARDIA.

It is clear that permanent bradycardia may be found in perfect health, perhaps more often in very tall men, as Seymour Taylor notices, and again in diseases, such as uræmia and chlorosis, where a high-tension pulse exists. It used to be the fashion to ascribe it to fatty degeneration of the heart, and again to fibroid changes, disease of the coronary arteries, or dilated heart, but all of these may be absent in a well-marked case. Austin Flint regards it as due to a brain lesion, others hold that it is often caused by atheroma of the cerebral vessels. Certainly disease of some part of the nervous system, such as an injury to the medulla or cord, is often the only lesion we can discover, and it has been said with some probability that the effect is produced by "an accentuation of inhibitory action coming to the vagus by spinal accessory fibres from the medullary centre" (S. Taylor, *loc. cit.*), since it has been shown that permanent slowing is never caused by the vagus alone. (From Drs. Fendick and Parker's paper in the Bristol Medico-Chirurgical Journal, June, 1899.)

## CARDIAC ASTHENIA IN PNEUMONIA.

During the past I have treated cardiac asthenia by administering, every fifteen minutes, fifteen drops each of the compound spirits of ether, aromatic spirits of ammonia, the compound spirits of lavender, and the tincture of valerian. This is kept up day and night until the pulse shows improved tone and the heart action is decidedly better. The valerian is added because of its quieting effect when administered in these small doses with the diffusible stimulants. Occasionally we meet patients who have been unable to retain the mixture when it contained valerian, hence we have been forced to omit it and to substitute either pure whisky or brandy in corresponding doses. If the Hoffman's anodyne is distasteful, it has been omitted and the dose of the ammonia and lavender has been doubled. The frequent administration of the compound has not seemed to annoy the patients, for, as a rule they are not awake longer than is necessary to swallow the remedy. I have further insisted upon the internal administration every two, three, or four hours, according to the urgency of the symptoms, of ·015 gramme (one-quarter grain) doses of spartein sulphate with from ·24 to ·36 gramme (4 to 6 grains) of caffein. Both of these drugs must be administered in larger doses than are usually prescribed if desirable results are to be obtained. Finally, the alcoholic stimulant upon which I depend is Tokay wine. This is administered in tablespoonful doses every half-hour, and is given with the ethereal stimulant when due. Occasionally it is necessary to use high rectal injections of coffee and whisky and hypodermic injections of ether and oil during periods of collapse. (From Dr. Elsner's paper in the Therapeutic Gazette, June 15, 1899.)

## CARDIAC INSUFFICIENCY.

Osborne (*Medicine*, October, 1899) discusses the drugs to be used in this condition. Morphine, while useful, may impair the action of the respiratory centres, but with the addition of atropin is the correct physiologic remedy. To give the proper tone to the arterial system, which is required, nitroglycerine, either 1/200 of a grain hypodermically or, better, the same amount by the mouth at short intervals until frontal throbbing is complained of, will generally obviate the necessity of venesection. In case the natural resolution of the cardiac paroxysm does not occur, but cardiac dilatation, œdema and passive congestion of the lungs or other symptoms of cardiac insufficiency show themselves, we must help the heart directly, and here digitalis is the best cardiac tonic. Digitalin is the best form for hypodermic use, and he advises the dose be from 1/100 to 1/50 of a grain. We must not forget to keep the patient in a recumbent position absolutely until the profound effects have passed off, which may not be for a number of hours. If, after stoppage of the paroxysm, we have cardiac exhaustion, as shown by pallor, pinched nose, intermittent pulse, &c., we must use stimulants, strychnine, camphor, and probably alcohol, though he admits that he is afraid of the latter in bad cardiac cases. Other drugs mentioned to be used in the after-treatment are cactus, strophanthus, spartein and caffein. In cases without valvular lesions due to narcosis or shock, if there has been hemorrhage, transfusion of saline solution is the first remedy, and he recommends the giving of high injections per rectum as routine practice after any severe prolonged operation. Heat to the extremities and heart, and elevation of the feet to aid in the return of the blood to the veins, &c., are also mentioned. The chronically weak heart without valvular lesions is best treated by strychnine, and small doses of digitalis and cactus. As stimulants, camphor and ammonia are better than whisky or coffee. Careful regulation of life and habits, and removal from nervous causes of exhaustion are advisable. (From abstract in Journal of the American Medical Association, October 28, 1899.)

## CYCLING AND HEART DISEASE.

Even if cardiac or circulatory lesions are found it does not follow that the bicycle should be forbidden, but it must be prescribed. Definite regulations must be laid down as to the character of the road, the length of periods of exercise, the kind of wheel, and the size of the gear. From personal experience I feel sure that proper bicycle riding will materially strengthen a weak heart, as it undoubtedly improves the general nutrition of the body. My contention is not that bicycling is a harmful mode of exercise. Indeed, I hold to the opposite view very strongly. Bicycling is productive of great good, both in the way of health and of pleasure. But at the same time we must recognize the fact that it presents peculiar temptations to excessive exertion that is dangerous. (From Dr. Getchell's paper in the Medical News, July 8, 1899.)

## ENDOCARDITIS, MALIGNANT RHEUMATIC.

The malignant rheumatic variety of endocarditis was first described by Litten, and he has studied altogether twenty cases of the disease. The disorder presents the characteristics of a severe general infection, with, as a rule, profound and extensive objective symptoms referable to the heart. The patient becomes anæmic, cyanotic, apathetic. The temperature is relatively low, though at times it may be high and be interrupted by irregular, intermittent chills. The spleen is enlarged, the diazo reaction is present and hemorrhage takes place beneath the skin and the mucous membranes and into the retina. Acute hemorrhagic nephritis, with blood and blood-casts in the urine, is relatively frequent. The metastases that occur assume the form exclusively of simple infarcts and anæmic necrosis, malignant and purulent metastases being entirely wanting. The course of the disease may extend over weeks or even months. Death is the usual termination. (From a leading article in Journal of the American Medical Association, September 2, 1899.)

## HEART DISEASE.—Mercury in.

Calomel used as a diuretic has at times so powerful an effect that it might be permissible to regard the diuresis resulting as a veritable renal purgation. Finkelstein was the first of recent years to call attention to this mode of producing diuresis in cardiac dropsy. The method consists in the exhibition of from one-fifth to four-fifths of a grain of calomel every two hours, presumably during the day, that is about from one to five grains daily given in small and frequently repeated doses for a period of four or five days and in ultimately combining the calomel with small doses (from one-seventh to one-third of a grain) of the powder of digitalis leaves. He states that mercurialisation or purgation rarely resulted and readily ceased on abandoning the drug for a time, and that the diuretic effects continued for a week or ten days after calomel had ceased to be administered. The diuretic effect usually manifested itself on the fourth or fifth day and the quantity of urine voided often amounted to seven litres or about 12 pints during 24 hours. In one respect Finkelstein's experience was the same as that of Stokes. It is stated that in some cases "calomel and digitalis were without effect when given separately, but rapidly brought about improvement when given together." The calomel usually acted better in mitral than in aortic cases, and was useless when there was concurrent nephritis of non-cardiac origin. Arnold Landau corroborated Finkelstein's observations, and found the method especially useful in the cardiac dropsy associated with non-valvular fatty disease of the heart It was the experience of both that after two or three courses of this character, undertaken during relapses into non-compensation and dropsy, calomel ceased to have the power of provoking the diuresis which both these authors ascribe in great measure to direct stimulation of the secretory structures of the kidney itself, during elimination of the drug by that organ. (From Dr. A. Morison's paper in The Lancet, October 28, 1899.)

## HEART, PHYSICAL PHENOMENA OF.

Zeehuisen (*Centralblatt für innere Medicin*, March 11 and 18, 1899) notes (1) that the cardiac impulse, which when standing is usually in the fifth intercostal space, is often found in the fourth intercostal space in the recumbent position, the diaphragm being then in the position of expiration ; (2) a limited extent of dulness is not infrequently found under the sternum in the horizontal posture, which disappears in the erect position ; this, too, seems to be due to the expiratory position of the diaphragm when recumbent, and its inspiratory state when erect ; (3) the aortic second sound is weaker than the pulmonary, particularly when the subject is lying down, and when the thorax is light; (4) murmurs, particularly those at the mitral orifice, are often much louder in the horizontal position than in the erect: these murmurs often disappear or are much diminished during a full inspiration; the same also applies to reduplicated sounds. In each case the inspiratory enlargement of the lungs tends to muffle the sounds by overlapping the heart. (5) Auscultation can be much more satisfactorily practised when the subject is recumbent with the exception of the aortic area. While, of course, one should never fail to auscultate the heart in varying positions, Zeehuisen lays particular stress upon the importance of the horizontal posture. (Dr. Crawfurd's abstract in the Practitioner, November, 1899.)

## HIGH ALTITUDE AND HEART DISEASE.

Dr. Robert H. Babcock draws the following conclusions:—(1) All forms of cardiac disease do not contraindicate sojourn at a high altitude. (2) The ill effects of low atmospheric pressure in some forms of cardiac disease are explicable on the hypothesis of acceleration of venous flow and corresponding quickening of the heart beats. (3) Consequently those forms with which high altitude is likely to prove incompatible are pronounced aortic or mitral stenosis, and regurgitant disease complicated by pleural and pericardial adhesions. (4) On the other hand, patients with uncomplicated regurgitant lesions or arterio-sclerosis with or without myocardial changes, may endure low atmospheric pressure without injury. (Medical News, July 15, 1899.)

## INSOMNIA OF HEART DISEASE.—Treatment of.

The insomnia of heart disease is benefited by digitalis, strophanthus, strychnine, and other cardiac tonics, but in some cases it is necessary to resort to morphine either by the mouth, or still better, hypodermically, as first suggested by my colleague, Professor Allbutt. Paraldehyde and chloralamide are in my experience most useful. Ice to the head is recommended by Morison where the vital forces are not too low or the temperature subnormal. It often produces sleep rapidly, with a more regular cardiac action. Heat may possibly answer in other cases presenting a subnormal temperature. In chronic Bright's disease insomnia is occasionally very troublesome. Eliminants such as aperients should be tried, and if they do not succeed, chloral hydrate may be given. The drug is safer in kidney than in heart disease, the reduction of blood-pressure being usually beneficial than otherwise. Morphine and hyoscine hydrobromide subcutaneously injected have been recommended in obstinate cases, but their employment requires great caution. Erythrol tetranitrate, by reducing arterial tension, often acts as a charm, even when sedatives have failed ; and in one of my patients thorough rubbing of the skin by means of a flesh-brush induced sleep, and very materially relieved the restlessness of the disease. When pain is the causal factor of insomnia morphine is usually the best remedy, and this should be pushed until relief is obtained. In cases of neuralgia, locomotor ataxy, and so forth, some of the synthetic analgesics—phenazonum or phenacetin—are of value. These drugs, as I have previously stated, act also as hypnotics in cases where there is no pain. Calcium chloride is a valuable remedy in the insomnia due to pruritus. (From Dr. J. B. Bradbury's Croonian Lecture, Lancet, July 15, 1899.)

## PAIN, CARDIAC, AFTER INFLUENZA.

In eight of 30 such cases the pain was paroxysmal and the attacks closely resembled those of angina pectoris. The paroxysms of pain were in some cases of extreme intensity. In regard to the treatment of the very acute cases I much fear that no plan is of much avail to avert the fatal tendency, but it is obvious that in the subacute forms therapeutic hopes remain. In addition to the various means of ministering to ease and comfort during the periods of suffering—phenacetin, antipyrin, and hypodermic injections of morphia judiciously employed—I am persuaded that the protracted administration of the iodides as recommended by Huchard is of value. I consider that the best for long-continued administration is the iodide of sodium in from five-grain to ten-grain doses. In the earlier stages this may be combined with ammonia and other diffusible stimulants; in the latter with small doses of arsenic (from three to five minims of Fowler's solution well diluted). (From Dr. A. E. Sansom's paper in The Lancet, October 21, 1899.)

## PERICARDITIS, SUPPURATIVE.—Treatment of.

Dr. C. A. Ljunggren (*Nord. Med. Ark.*, New Series, 1899, No. 28) has formulated the following rules to govern operations for suppurative pericarditis : (1) The pericardium must be opened sufficiently to permit of a complete view of its contents, thorough drainage by means of two thick drainage-tubes, and the easy removal of the fibrinous masses present. (2) The incision must be so placed as to afford thorough evacuation of pus, and permit drainage of the posterior portion of the pericardium without interfering with the movements of the heart. (3) The incision is to be so placed as to lie within the normal boundaries when the pericardium has retracted. (4) The pleural cavity must be protracted against infection by the pericardial pus. (5) In order not to injure the lung the incision must be altogether within the area of absolute dulness. (6) Should it be impossible to avoid the mammary vessels, it is best to ligate before cutting them. (7) In opening the pericardium carefully avoid any injury to the heart. (8) The operation must be made as short and simple as possible. General anæsthesia is contraindicated in weak patients. By resecting a portion of the fifth rib in the left mammary line we comply as closely as may be to the above demands. In some cases resection of the sternal end of the sixth costal cartilage will be of aid. The pleura is bluntly loosened and sutured laterally to prevent infection of the pleural cavity. (From abstract in the Annals of Surgery, November, 1899.)

## SPARTEIN IN HEART DISEASE.

Dr. P. M. Chapman (*Birmingham Med. Rev.*, May 1899) states that he has been in the habit for many years of using spartein sulphate in cases of passive dilatation of the heart, especially without marked valvular lesion. He reports a case in which there was very advanced dropsy, a feeble pulse of 130 per minute, a markedly dilated right ventricle, and advanced atheroma of the arteries. Digitalis had been given without effect, and the patient was apparently dying. He prescribed ½ gr. spartein sulphate with 20 minims tinct. ferri perchlor., every four hours. There was almost immediate improvement, and in two days the patient was able to sit up. It is often necessary to permanently continue the drug, but no increase of dose is necessary. One patient of Chapman's has taken it continuously for nearly a year, to relieve the dyspnœa consequent on an aortic lesion. The dose is ½ to 1 gr. every four hours. It has a slight purgative effect, and is also a diuretic. (Edinburgh Medical Journal, September, 1899.)

## TACHYCARDIA.

(By Dr. J. Magee Finny.) I present here clinical notes of three cases of tachycardia, the first two cases being examples of paroxysmal heart hurry; the third case was persistent for sixteen days, and ended fatally with gangrene of both lower extremities due to arterial thrombosis. [The details of the cases are omitted.] I wish to call attention to the rarity of the condition called tachycardia, remarkable character of the pulse, its recurrent or paroxysmal features, the length of time life may be maintained, and the paucity of post-mortem examinations. The condition may come on seemingly without cause, and may attack at any age, 70 to 5 years of age. None of the theories founded on the teaching of physiology, experiment, and pathology quite suit the case of a heart suddenly beating 200-240, and as suddenly, after hours' or days' duration, by day or by night, falling to 70-80. I may mention that of the six fatal cases which have been examined after death, three showed inflammation or fatty disease of the muscle of the heart, and three dilatation: and I may contrast one of my own cases in that the myocardium was perfectly healthy and the organ not dilated. The cause of the gangrene was arterial and venous thrombosis of the iliac on one side after femoral on the other, while the kidneys, lungs, and liver were the seat of infarcts; yet none of these infarcts, any more than the heart itself, showed any bacteriological evidence of infective or other micro-organisms. The reading of it was probably—first, primary febrile, possibly influenza; second, cardiac weakness as its effect; tachycardia as another possible effect of the toxin on the cardiac ganglia; and third, thrombosis of the right and left auricles, and infarctions (emboli) of the pulmonary and systemic arteries. (Medical Press and Circular, June 21, 1899.)

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## AFFECTIONS OF THE RESPIRATORY SYSTEM.

### ASTHMA.

Dr. W. Blair Bell emphasises the importance of looking upon asthma as a symptom which may be caused by many diseases. (1) *Direct Causes in the Lungs.* (*a*) Mechanical and toxic irritation (external).—This may be caused by the inhalation of vapours, cold air, or dust (*i.e.*, solid irritants). The result is usually immediate, and may disappear when the cause is removed. (*b*) Mechanical and toxic irritation (internal).—By the elimination of irritant or toxic compounds from the blood in cases of gout, rheumatism, Bright's disease, intestinal intoxication, and uterine disturbances, especially pregnancy. (*c*) Pathological conditions of the lungs.—Tubercle, bronchitis (chronic or acute), broncho-pneumonia, &c., may all be accompanied by asthma. (2) *Indirect Causes.*—These indirect influences convey their impressions to the lungs through the branches of the vagus nerve, which has a pulmonary plexus. The peripheral branches have wide-spreading connections, and by far the most important in the causation of asthma is the gastric branch. (*a*) Gastric irritation.—In a large proportion of the attacks of asthma in children here lies the cause. The reflex result takes place along the course of this gastric branch. (*b*) Naso-pharyngeal and aural.—I need not repeat what can be found in any text book of anatomy concerning the connections of the vagus with these regions, I must merely point out that polypi, adenoids, enlarged tonsils, catarrh, &c., are a frequent cause of asthma. (*c*) Cardiac.—It has been shown that "cardiac asthma" in a general way is not asthma at all, in the true sense of the word, but there *is* a true cardiac asthma which arises from irritation of the cardiac termination of the vagus, and produces a reflex irritation of the pulmonary plexus. It is very rare, and is the result of myocarditis and possibly pericarditis. (*d*) Central.—Central irritation is caused through the channels of the ordinary senses of touch, sight, hearing, smelling; or by mental impressions—fright, emotion, &c. Direct impulses are transmitted along the vagus to the lungs from the central nervous system. (From Dr. W. Blair Bell's paper in the Edinburgh Medical Journal, October, 1899.)

## BRONCHITIS, PLASTIC.

The following is taken from Dr. Oliver's paper:—Treatment divides itself under two heads: (1) means used to loosen and dislodge the plugs; (2) to prevent their recurrence. The employment of emetics seems rational, but unless the fibrinous casts are already lying loose, it is difficult to eject them by inducing vomiting. Besides, as we have no exact means of knowing when the plugs have become so thoroughly loosened that they can be thrown off, it is, on the whole, the wiser plan not to administer emetics. Various inhalations, medicated and otherwise, have been suggested, but in my experience I cannot say that any of them were of the slightest service. They were badly borne by my elder patient, a remark which applies equally to the use of the steam kettle. I regard the treatment of plastic bronchitis as, generally speaking, unsatisfactory. Nothing short of expulsion of the casts gives relief. Lime water or lactid acid sprays and inhalation, also solutions of the alkaline carbonates, are not more reliable. The internal administration of iodide of potassium, with or without expectorants, gives as good results as anything. Ewart recommends the cautious intratracheal injection of oil, or a mild solvent such as lime water or trypsin. To prevent recurrence I know of nothing better than the employment of such means as will improve the general health, living in a dry, bracing atmosphere, good food, the internal administration of tinct. quin. ammoniat., nux vomica, cascarilla, with or without cod-liver oil. (British Medical Journal, July 8, 1899.)

## COUGH, REFLEX.

Reflex and nervous cough is characterised by some or all of the following: Sudden appearance; rhythmical character; free intervals when no signs of cough are present; expectoration absent or slight in amount; no fever or marked constitutional disturbance; may continue for years or stop at any time, or eventuate in other symptoms; may come at regular intervals; stops when person's attention is fully occupied; is most marked when the patient is under observation; if stopped for a time begins with an explosion; is usually absent at night, always if purely nervous; absence of physical signs in respiratory tract; cough apparently a useless one, does not accomplish anything; patient complains of usual symptoms of catarrhal cough in the respiratory tract; its tone is various, sometimes hacking, bellowing, shrill, croupy, metallic, at other times hoarse from insufficient cord tension. This latter is an imperfect cough, and according to Professor Gardner is somewhat distinctive of thoracic tumours or aneurysm pressing upon the recurrent laryngeal nerve. Its chief features are hoarseness and imperfect explosion; it is a noisy, not infrequently harsh, brassy cough. With all the foregoing in mind, however, the diagnosis is frequently difficult. (From Dr. G. L. Richard's paper in the Medical Record, August 5, 1899.)

## GANGRENE, PULMONARY.

Dr. A. H. Levings emphasises the following points: (1) All cases of pulmonary gangrene which are progressive and not absolutely diffuse should be operated upon. (2) The gangrenous area should be localised by physical examination, aided by the use of the aspirating needle, and, if necessary, by multiple resection of ribs. (3) In the absence of pleuritic adhesions, the general pleural cavity should be shut off either by a gauze packing or by a row of sutures. (4) After thorough opening and free drainage of the gangrenous cavity it should be daily cleansed by gentle irrigation. (5) The cavity should be tightly packed with iodoform gauze. (New York Medical Journal, October 14, 1899.)

## INSOMNIA IN LUNG DISEASE.—Treatment of.

In pneumonia sleep usually comes at the crisis, but where this has not occurred I have occasionally seen a hypnotic—such as chloralamide or paraldehyde—turn the scales in favour of the patient. In pleurisy and most other serous inflammations from five to ten grains of Dover's powder usually conduce to sleep mainly by relieving the pain. A hypodermic injection of morphine may be given with the same object in view. In bronchitis chloral and chloralamide are safe hypnotics and, as a rule, opiates are to be avoided, as these, as I have pointed out, depress the respiratory centre. The sleeplessness of asthma is relieved by remedies which cut short an attack, such as chloral hydrate, the fumes of Himrod's and other asthmatic powders, the hypodermic injection of morphine, or in some cases from a five-grain to a ten-grain dose of citrate of caffeine. Bromides are also useful, and so is paraldehyde, which both relieves the asthma and causes sleep. A change of locality even to another part of the same town often succeeds. In one case the removal of a student from Downing College, Cambridge, to a house across the street brought relief, and in another of my pupils the change from Caius College to a house in another part of the town brought to an end a most troublesome attack of asthma with its attendant sleeplessness. (From Dr. J. B. Bradbury's Croonian Lecture, Lancet, July 15, 1899.)

## ECHINOCOCCUS OF THE LUNG.

(By H. Gross, *Beitrage zur Klin. Chirurgie*, xxiv., 2, 1899.) Four cases of echinococcus of the lungs all recovered after removal of the cyst, surpassing even Tuffier's percentage—90·1 per cent., that is, 55 recoveries in 61 operations. Gross recommends drawing the lung forward and suturing it in case of pneumothorax, tamponing the thoracic cavity to keep the air out. He prefers the scissors to enter the lung and rejects the thermocautery, as it chars and makes the lung tissue unrecognisable. He applies compression to arrest hemorrhage, and seizes the lung before cutting into it, to prevent retraction. He removes the entire covering in peripheral abscesses and leaves a passage two or three fingers wide with a central focus. In one case of multiple suppuration of the lung he found Delorme's method of decortication, that is, shelling the lung out of the pleural envelopes, very useful in the expansion of the lung. (Journal of the American Medical Association, October 14, 1899.)

## EMPYEMA.—Treatment of.

Mr. Edmund Owen said the question of the nature of the effusion in pleurisy was one of great importance, and he thought that it had not hitherto received the attention which it demanded. The casual inspection of the fluid drawn off at an exploratory puncture just previous to operating on the empyema did not suffice to reveal its exact nature. He did not think every empyema should be treated on the same lines. On opening a psoas abscess the tuberculous fluid was not always thin and watery; sometimes it was thick and creamy, yet the psoas abscess did well after evacuation and after immediate closure of the wound. So in an empyema the tuberculous effusion might be purulent in appearance though it contained no pus-producing organisms. Was such a tuberculous empyema to be treated in the same way in which the surgeon would deal with a pleural abscess teeming with staphylococci or the cocci of pneumonia? He was of opinion that a considerable proportion of cases of empyema might be advantageously treated without drainage, the wound being closed directly the cavity had been evacuated. If so, the sooner it was shown how such cases could be recognised the better. As to the sight of the incision in empyema, he thought it should be in the mid-axillary line in front of the angle of the scapula, the exact interspace not being important. He thought the rib should be resected, and that irrigation should never be practised unless unavoidable—for example, if the wound became septic. As regarded the early removal of the tube he thought the surgeon needed pluck in such cases—in fact, to "ride for a fall," expecting to have to replace the tube if the temperature rose. The case was analogous to that of tracheotomy, and the rule should be the same, and the tube removed, if anything, too soon. Drainage tubes should never be secured by a safety pin, but should have a proper flange to prevent their slipping into the pleural cavity by accident. (From the discussion on Empyema at the British Medical Association, British Medical Journal, August 19, 1899.)

## PHTHISIS, HOSPITALS FOR

We have spoken of sanitaria meant for the cure of incipient phthisis, but equally important and necessary are hospitals for the hopelessly ill within easy access even if not within the immediate confines of our cities. So much has been written upon this point of late that it would seem hardly necessary to do more than emphasise the manifold advantages of such institutions. By the removal of hopelessly-ill consumptives from our overcrowded, unhygienic poor districts we not only take away probable sources of infection, but place them where proper care may be given, at the same time relieving the families and friends of burdens which they can ill afford to bear. (Medical News, October 7, 1899.)

## Phthisis, Open-Air Sanatoria for.

[The following is taken from an article in *The Lancet.* The number of available beds and the charges are omitted.] There are now three sanatoria in Hampshire, under Dr. Pott, Dr. Johns, and Dr. Mander Smyth respectively. In Sussex there are a small sanatorium at Rudgwick and a colony at Crowborough. In Surrey a large sanatorium (London Sanatorium) is being prepared under the auspices of the National Society for the Prevention of Tuberculosis, and a small one will probably be opened at Christmas under Dr. Rufenacht Walters at Crooksbury Ridges, near Farnham.

There are two in the west of England, on the Cotswolds and the Mendips respectively. There is a colony in Oxfordshire under Miss Colebrook, who will soon have a sanatorium open. In the eastern counties Dr. Jane Walker has a sanatorium near Colchester, and Dr. Burton-Fanning will open another at Mundesley in October. There is one recently opened at Rostrevor in Ireland. Dr. Pott's sanatorium is in the Poole Road, Bournemouth. Dr. Johns, who began the treatment at Sunny Mount, Meyrick Park, a suburb of Bournemouth, will shortly migrate to Stourfield Park, where a large building has been acquired by a company. Dr. Mander Smyth's sanatorium at Linford, near Ringwood, on the edge of the New Forest, has been modelled on that of Dr. Walther at Nordrach in Germany. Dr. Jane Walker's sanatorium, originally at Denver in Norfolk, has been removed to larger temporary premises at Boxted, near Colchester. The East Anglian Sanatorium at Naylands in Suffolk will replace the one at Boxted. Dr. Walker comes down periodically from London, another medical lady being in residence. There are two other establishments under the care of Dr. Walker, a cottage for a few patients of the hospital class at Denver and a temporary sanatorium at Southend-on-Sea, which will presently be moved to Clare, near Colchester. The Mundesley Sanatorium is near the north-east coast of Norfolk. The Cotswold Sanatorium, under Dr. Pruen and Mr. Braine-Hartnell, of Cheltenham, consists of two specially-built residential blocks (one nearing completion) and a neighbouring mansion acquired from Mr. W. Hicks-Beach. Mr. Braine-Hartnell resides at the sanatorium. In the sanatorium on the Mendips, in Somerset (Nordrach upon Mendips), Dr. Thurnam and Dr. Gwynne treat their patients according to strict Nordrach methods. The colony in Oxfordshire is at Poppard, near Rotherfield Greys. It consists of a number of cottages and farmhouses, with a total accommodation of ten or more. The colony at Crowborough, between Brighton and Tunbridge Wells, is under the care of Mr. Plater Long. The Rudgwick Sanatorium, between Horsham and Guildford, is under the care of Dr. Annie McCall, who goes down periodically from London. Patients are looked after by a local practitioner in cases of need. There will, however, shortly be a resident medical lady. Gentlemen are not at present received. With the exception of Dr. Pott's and Dr. Johns's present establishments, the above-mentioned sanatoria are all situated in the open country. Those on the Cotswolds and the Mendips and the Crowborough colony stand at 800 feet or more above the sea level. The sanatoria on the Cotswolds, the Mendips, the East Anglian, the Mundesley, and the one at Crooksbury Ridges are all provided with extensive grounds. Many medical men also are carrying out the treatment in their own houses in various parts of the country. (The Lancet, September 9, 1899.)

**Phthisis.—Prevention and Cure of**

The early diagnosis is most important. Fresh air in constant supply and good food in ample quantities, constitute the chief factors in treatment. The selection of a sanatorium is perhaps a point of very minor importance; indeed, it seems to me, that all these branches of the subject are insignificant compared to the prevention of tuberculosis and the main object at this time should be the recommendation and adoption of some methods by our municipal and provincial health boards to secure to citizens more protection than at present is possible. The isolation of patients with pulmonary tuberculosis is impracticable,—hence the necessity of educating the people in the matter of cleanliness and of adopting again that measure which prevents the spread of the disease by house infection. Those among us who treat patients with pulmonary tuberculosis may do something in preventing the spread of this disease. It has been my practice during the last two years in the out-patient department of the Royal Victoria Hospital to place in the hands of each patient so diseased a card bearing simple instructions concerning the disposal of sputa, sleeping alone, living in the open air, &c.; urging these things in the light of importance to personal health and the health of others. (From Dr. W. F. Hamilton's paper in the Montreal Medical Journal, July, 1899.)

**Phthisis.—Roentgen Rays in.**

In neither of two patients were there physical signs, nor did $x$-ray photographs taken on this day give any indication of an abnormal condition of the lung, but well-marked signs were seen on the fluorescent screen. Again, in two cases of incipient tuberculosis in young women in whom the disease was recognised first by an $x$-ray examination with the fluorescent screen I could see no difference in the two sides by the $x$-ray photograph. In one of these patients I found no physical signs at the time the $x$-ray photographs were taken; in the other, where the $x$-ray photograph was taken some time after the disease was recognised on the screen and the disease had progressed, there was slight increase in tactile fremitus and a prolonged expiration on the right side. The cases lead me to believe that in these diseases we way have in the fluorescent screen a more ready, convenient, and delicate method of recognising an abnormal condition of the lung than we have in $x$-ray photographs, and the screen has the advantage of revealing the mobility of the diaphragm and heart. If simple precautions are taken there is not the slightest *risk* even of an $x$-ray burn. I have examined about 3000 patients without a single case of injury or of inconvenience even. I wish to emphasise the fact that signs may be obtained by an $x$-ray examination when the disease is limited not only to one side, but is just beginning even on that side, before there are physical signs in the first lung or cough. It is interesting to note that $x$-ray examinations show that the disease begins oftener in the right than in the left apex. (From Dr. F. H. Williams' paper in the Medical News, Septemper 16, 1899.)

### Phthisis.—Treatment of.

Of "High Altitudes" and "Dry Climates" the same broadly may be said. Pure air first, and everything else afterwards. At the same time, I believe both altitude and dryness of atmosphere have much more claim to consideration as desirable conditions for the phthisical subject than the vague lottery described as a "sea voyage." Having lived for several years at altitudes of from 4 to 6,000 feet in a sub-tropical climate in South Africa, the stimulating and invigorating effect of the mountain air—though no cooler than that of the coast—has distinctly impressed me in its effect both on the healthy and on the consumptive. Many consumptives, after a month or two on the coast in South Africa, where the air is often heavy with moisture, on finding they are no better, migrate up-country into a higher and drier atmosphere, and immediately begin to improve. Of this numerous instances have come under my notice, although the open-air life on the coast and up-country had been followed to the same extent in both cases. I am convinced that the hot, heavily moisture-laden atmosphere of low districts in the tropics and sub-tropics is extremely bad for consumptives—quite as bad, if not worse even than the fogs of our own country, as at high temperatures much more moisture is suspended in the air. (From Dr. Hillier's paper in the Practitioner, August, 1899.)

## PNEUMONIA COMPLICATED BY MENINGITIS.

It is most exceptional for the meningitis of pneumonia to present the symptoms of cerebro-spinal fever, and in a dubious case occurring during an epedimic the lumbar puncture may be relied upon to clear up any doubts. The most valuable clinical record of meningitis in pneumonia is to be found in Nauwerck's paper. The histories, seventeen in number, are very full and complete, and in every case accompanied with a post-mortem report. He has added a series of twelve cases from the literature, making twenty-nine in all. All of the cases were above the twentieth year of age—a striking contrast to cerebro-spinal fever, in which a large proportion of all the cases are in the young. A second point is the latency of meningitis in pneumonia, which is much more often recognised in the dead house than in the wards. Netter states that fully one-half of the cases are of this latent type. Of the cases I saw in Montreal I remember but one in which the diagnosis was made during life. Headache, early delirium, deepening into unconsciousness, are present in all cases. This is a consequence of the more common involvement of the cortex of the hemispheres. As Leichtenstern remarks, the mind may remain clear throughout the course of a case of cerebro-spinal fever. Spinal symptoms are rare ; in only seven of the cases analysed by Nauwerck was there rigidity of the neck muscles. Strabismus was present in one-fifth of the cases, ptosis only once. And lastly, a most important difference between the meningitis complicating pneumonia and cerebro-spinal fever is the almost universally fatal course of the former. (From Dr. Osler's Cavendish Lecture, West London Medico-Chirurgical Journal, June 16, 1899.)

## PNEUMONIA IN INFANTS.

Dr. W. P. Northrup thus concludes his paper : The best three signs of obscure beginning pneumonia in infants under two years are : (1) Disturbance of pulse-respiration ratio, so that it departs from the normal of 4 to 1 and approximates 3 to 1. (2) Fever : Continuous, intermittent, or remittent. (3) Râles : fine. Treatment.—(1) Hygienic : fresh air. (2) Dietetic : avoiding indigestion and flatulence. (3) Hydropathic : baths or packs. Poultices, for pain only, should be used intermittingly. Heart stimulants: strychnine, nitro-glycerine, alcohol, digitalis, when needed. Antipyretics—(the coal-tar products are mentioned only to condemn them absolutely). (Medical Age, October 25, 1899.)

## PNEUMONIA TREATED with ANTI-PNEUMONIC SERUM.

(From Dr. Antonio Fanoni's paper.) The anti-pneumonic serum was discovered by Professor Pane, of the Royal University of Naples, and was first introduced to the medical world in a paper which Dr. Pane read before the Royal Academy of Medicine of Naples in 1897. The serum was first tried in Professor De Renzi's medical clinic in Naples, and gave very promising results. The serum is prepared in two strengths—No. 1 is mild, and No. 2 is more concentrated and stronger. The first is used in the milder cases and early in the disease, while the second is reserved for the more severe types of pneumonia. In the most malignant cases the dose should be doubled or even tripled. The writer was surprised at the results which he obtained in some of his own cases, for they were in several instances of a most desperate character. The best site for the injection is along the posterior axillary line. The injection is given twice a day, say at 8 or 9 a.m., and again between 8 and 10 p.m. The usual dose is 10 cubic centimetres at each injection. The injections should be used regularly, both in the morning and in the evening, while the fever exceeds 104° F. If the fever subsides and there are no asthenic symptoms, we may suspend the injections, and thus save the patient the expense of serum treatment. But if the temperature rises again, we have to resume the injections. When the fever remains under 104° F., and there are other severe general symptoms, it will be necessary to continue the use of the serum until the patient's condition begins to improve. Where the serum is used, all other medication must be omitted, and only hygienic measures should be employed. The daily diet should comprise a litre and a half or two litres of milk and one or two cups of broth, with the yolk of an egg. In addition, the patient may be given some alcohol and water. De Renzi gives 30 grammes of alcohol in 500 of water on the first day, 35 on the second, and so on, until 60 or 70 grammes in 24 hours are reached. This last dose is never exceeded. Personally, I have never given this stimulant unless the necessity for such a measure was very apparent. The best proof of its efficiency is the fact that it has been used with success when death was expected within 24 hours. But if the pre-agonistic stage is reached—*i.e.*, when septicæmia had set in—there is no hope for the patient even in serum therapy. The success which has attended the use of this remedy in Italy makes it possible to state that the De Renzi Pane's serum is a positive specific in the treatment of pneumonia. Since 1898 I have used it in six cases of pneumonia in my private practice, and have obtained a remarkable series of successes. (New York Medical Journal, August 26, 1899.)

## PUNCTURE, PULMONARY HEMORRHAGE AFTER EXPLORATORY.

In view of the possible occurrence of this accident, which he has seen in four cases, Koplik (*Arch. Pediat*, August, 1899) considers the following points worthy of attention :—The introduction of the exploring needle should not be regarded as entirely harmless, and should only be undertaken when the physical signs point distinctly to the presence of fluid in the chest. It is rarely necessary to puncture more than once at a sitting, and it must only be repeated a second time when some very special circumstance indicates its expediency. The repeated puncture is fraught with greater danger of hemorrhage, on account of the continued struggles of the child. The needle should be introduced at the point of the maximum dulness in the chest-wall, and at that point only. The puncture should be made with a needle of not more than a millimetre in calibre. The needle should not be entered to a greater depth than 2 cms. in the chest wall. It should not be entered and then withdrawn, and pointed up and down and in various directions in quest of pus, for in this way the struggling of the child, even when firmly held, is apt to cause puncture of the lung. The needle should be withdrawn as rapidly as it is entered, and the whole operation should be completed in less than half a minute. Puncture should be made cautiously on the left side, both in front and behind, in the vicinity of the heart and great vessels. (From abstract in the Edinburgh Medical Journal, October, 1899.)

## TRACHEA, SYPHILITIC ULCERATION OF.

The symptoms consequent on ulceration of the trachea are so various, that this lesion is not only apt to be, but frequently is, confounded with other diseased processes. The sudden onset and the severity of the respiratory difficulties, together with the noisy character of the breathing, which was present in a marked degree in all of the cases, and which proved fatal in two of them, somewhat resemble the symptoms associated with laryngismus stridulus; while in others the spasm may be so severe as to suggest angina pectoris as the cause. When the difficulty is constant, that is, when cicatricial contraction has occurred, chronic laryngitis may be diagnosed. After the exclusion of phthisis, aortic aneurysm and mediastinal tumour are perhaps most frequently looked for to account for the symptoms, as the character of the cough and the respiratory difficulties, especially those on and after exertion, simulate in some respects those symptoms which result from interference by pressure with the innervation of the larynx. The use of the laryngoscope should go far to negative this suspicion by demonstrating the non-impairment of the intralaryngeal muscles. (The above is taken from Dr. Downie's paper in the British Medical Journal, October 14, 1899.)

# AFFECTIONS OF THE DIGESTIVE SYSTEM.

## ANUS, FISSURES OF THE.

Fissure of the anus is, as everyone knows, an affection as troublesome as it is painful. Of the different remedies recommended, forcible dilatation of the sphincter is the most radical and perhaps the most effectual. But it is not easy to get the patient to submit to the operation outside of hospital practice. Dr. Boas recommends a much simpler treatment, which he affirms to have succeeded with him ten times out of twelve. The principle of the treatment being the complete immobilisation of the anal region, he puts the patient to bed for one week, allowing for all nourishment, milk and light potage. At the same time he orders ten drops of laudanum to be given three times a day, so as to produce absolute constipation. If the fissure can be brought to view he powders it with iodoform, calomel, &c., but without touching it with any instrument or dressing. Any antiseptic washing would be more hurtful than useful. At the end of eight days he administers a full dose of castor oil, recommending the patient to restrain himself from defecation until he felt that the contents of the intestine had become completely liquid. The treatment only failed where complete retention of the fæces could not be obtained. (Medical Press and Circular, September 20, 1899.)

## CHOLELITHIASIS.

Naunyn (*Centralbl f. Chir.*, April 22, 1899) affirms that cholelithiasis as seen in private practice, is not so grave a condition as hospital practice leads one to think. He asserts that a favourable issue results in the large majority of cases without surgical interference. Certainly stones as large as a cherry can pass the common duct, and in many cases a fistula forms between the common duct and the duodenum, and then still larger stones may pass. Indications for operation are given as follows: (1) It is not justifiable to advocate operation in every case as soon as a diagnosis of cholelithiasis has been established, for operative interference does not guarantee a permanent cure, since stones may be left behind, or others form. (2) Cases of acute cholecystitis with a greatly distended gall-bladder, as well as chronic cases of hydrops of the gall-bladder should be submitted to operation. (3) In cases of chronic recurrent cholelithiasis, and (4) in cases of obstructive jaundice operation should not be resorted to until a thorough Carlsbad treatment has failed. (Medical News, July 1, 1899.)

## CONSTIPATION IN INFANTS.

(By Dr. H. M. McClanahan, Omaha). When the constipation is due to the quality, quantity, and method of feeding, the question of the diet is of the greatest importance; no arbitrary rule can be given; each case has its peculiarities, which must be studied. The percentage of fat should be increased, and the percentage of casein reduced. The character of the stools should be carefully noted; when light-coloured and dry, the casein is to be decreased, and in some cases milk should be carefully peptonised. In two of my cases I found the addition of a teaspoonful of malt extract at each feeding a decided benefit. Correction of the diet, however, will not always cure constipation, and a certain amount of drug treatment is necessary. My first choice is for the resin of podophyllin, given in alcohol in doses of from $\frac{1}{40}$ to $\frac{1}{24}$ of a grain. When the discharges are coated with mucus, phosphate of sodium is an excellent remedy, given in the form of a saturated solution. If a little orange juice is added to the dose when given, the child will take it more readily. When there is muscular debility as indicated by tympanitis and flabby muscles, strychnine and nitric acid are the best remedies. In these cases, massage, not only of the abdomen but of the entire body is of decided benefit. (From Dr. H. M. McClanahan's paper in the Journal of the American Medical Association, October 14, 1899.)

## DIARRHŒA, CHRONIC INFANTILE.

Irrigation of the large bowel, carefully and thoroughly carried out each day with a fountain syringe and No. 12 catheter (not too flexible) is of decided benefit. A gallon of fluid should be employed for each irrigation, the liquid being at 98° to 100° F. Saline solution, boric acid solution, or nitrate of silver, $7\frac{1}{2}$ grains to the gallon, have all in my hands been most useful. The child lies with the hips elevated; the catheter, well oiled, is allowed to gently pass six or eight inches up the bowel, the liquid being allowed to flow gently during its introduction, and the reservoir not raised more than three feet above the child's body. (From Dr. A. Jacobi's paper in the Therapeutic Gazette, August 15, 1899.)

## DYSPEPSIA, CHLORAL HYDRATE IN NERVOUS.

Rosenbach (*Therap. Monatsh.*, Berlin, September, 1899) has used it largely in dyspepsia from emotional causes, reflex neuroses, in conditions of nervous cardiac action arising from the stomach, and in asthma due to similar causes, the so-called asthma dyspepticum. Here it seems to exert a local sedative effect on the stomach and bowel, and acts better than bromides, valerian, &c. Small doses cause in these cases a slight increase of peristalsis in the stomach and bowel, which is followed by a relief of the symptoms. It is difficult to specifically describe the cases in which it is especially useful, but in neurotic persons, who complain of dyspeptic symptoms after eating, such as fulness in the epigastrium, tiredness and headache, a certain amount of dyspnœa, acidity, and flatulence, especially after bodily or mental exertion, and who are at the same time sleepless, the administration of chloral hydrate is indicated. In such cases, where the disturbance is due to purely nervous causes, it excels alkalies and all the other ordinarily used stomachics, although these remedies are better where dyspepsia has not the neurotic etiology. It is often very useful in hyperacidity, cardialgia, and hyperperistalsis. Also in fermentative dyspepsia, with a feeling of distension and acid eructations, leading to nervous diarrhœa and colic. The dose need not be large, 2 or 3 grs. well diluted with water one or two hours after eating, and repeated if necessary. It may be taken several times daily if the symptoms are persistent, and in this dose has no hypnotic effect, but should be intermitted every few days. (From abstract in the Edinburgh Medical Journal, December, 1899.)

## HÆMATEMESIS.—Operative Treatment of.

Dr. G. E. Armstrong read a paper before the British Medical Association advocating operation in severe hemorrhage from the stomach. He divided cases of stomach hemorrhage into two groups—small repeated hemorrhages coming probably from capillaries and amenable to medical treatment, and large sudden hemorrhages due to ulceration into arteries and not yielding to ordinary treatment. He related the results of post-mortem examinations in the latter class of cases at the Montreal Infirmary. The arteries were found open, and in some cases admitting a probe. In these cases he advocated operation to secure the bleeding point. (Medical Record, September 2, 1899.)

## HÆMORRHOIDS, INTERNAL.—Treatment of.

For about six years I have been treating uncomplicated internal hæmorrhoids in the following manner (my statements are based upon more than three hundred operations). Two days before operation a physic should be given—compound cathartic pills, or calomel followed by saline. A gentle physic should also be given the day preceding operation, a high enema the night before, and an ordinary enema the morning of operation. The patient is fully anæsthetised and placed in the dorsal position, the legs being held by a Clover crutch. The most satisfactory speculum that I have found is known as the Pratt bivalve. It is made in two forms, one of which can be easily passed up into the sigmoid. After adjusting the speculum so that a pile tumour presents between the separated blades, I take hold of the margin of the mucous membrane below the tumour, and with the sharp-pointed scissors curved upon the flat I strip off the membrane covering the vein extremities, which often present the appearance of grapes and should be clipped out with the scissors. If there be but a small quantity of fibrous tissue, this is all that is necessary ; the tumour will have disappeared. If there be much fibrous tissue, I cut it off smoothly from the surface of the muscle. If a spurting vessel presents, I pick it up with a pair of artery forceps, and proceed to deal in the same manner with the next tumour. When I have thus passed around the whole circumference I remove the artery forceps. I then dilate the sphincters gently but thoroughly, and examine for bleeding points, which if found are again picked up with a fine-pointed artery forceps and ligated with fine catgut. This ligation is seldom necessary, as the artery, freed from the fibrous tissue, retracts, and its intima being wounded by the forceps, its lumen is closed. I then clip off the tags of redundant skin about the anus and insert a plug of iodoform gauze, or one of wool covered with China silk and dusted with iodoform or aristol. This plug lessens capillary hemorrhage, and should be removed as soon as the patient complains of pain. Its removal clears away any small clots which may have formed. Sterile gauze wrung out of water as hot as can be borne is at once pressed firmly against the anus. This is repeated by the nurse every few minutes until the patient is comfortable, when a larger compress can be secured firmly by a T-bandage. This gentle but firm pressure lessens the tendency to spasm. In men there is usually a greater tendency to spasm of the sphincter muscles than in women, and an anodyne often has to be given. (From Dr. Metcalf's paper in Medical Age, 1899, p. 733.)

## INDIGESTION AND BAD TEETH.

The important bearing of bad teeth on indigestion has generally been assumed to be chiefly mechanical, and to be due to imperfect mastication, throwing excessive work on the stomach. This, however, is by no means all : thus in pyorrhœa alveolaris the pus, with its multitude of putrefactive organisms and decayed food remnants from pus pockets, may, when swallowed, produce various pathological effects ; thus, according to Fitzgerald (*Clin. Jour.*, March 8, 1899), it may act locally upon the stomach wall, or set up fermentation of the gastric contents. Then again, the toxins produced in the mouth may be absorbed through the mucous membrane of the mouth or stomach, while from the growth of micro-organisms in the mouth general infection may take place and give rise to influenza, and possibly form the starting-point of various blood or tissue infections of obscure origin; among which Hunter (*Trans. Odontol. Soc.*, February, 1899), suggests osteomyelitis and acute necrosis, apart from injury, idiopathic meningitis, empyema in children, and infective endocarditis. (From Dr. Rolleston's abstract in Practitioner, August, 1899.)

## JAUNDICE, INFECTIOUS.

Fringuet (*Presse Médicale*, July 5, 1899) records an outbreak of jaundice affecting seven children. These children were not of the same village, but all attended the same school, where they all had their lessons in the same room. None of the patients were severely ill, and some of them were so slightly affected that no medical advice was sought. The illness commenced with feebleness, loss of appetite, digestive disturbance, sometimes nausea and vomiting, epistaxis. Constipation was noted in the three cases observed by Fringuet. The jaundice was not deep; it appeared four or five days after the commencement of the illness, and disappeared eight to ten days after the commencement of convalescence. The liver was enlarged, sometimes tender to pressure. The spleen appeared to be larger than it normally should be, but this enlargement did not persist during convalescence. There was diminished frequency of the pulse; in one case, at one time, it was only 55 in the minute, and was still only 58 when the urine had regained the usual colour, and gave no Gmelin's reaction. Convalescence was good in all cases, and there was no relapse. The pathology and exact etiology remain doubtful. A new well had been sunk in the garden of the schoolhouse, but it appears that the children had not yet taken any water from this well. It may be noted that not more than thirty pupils attended the school in question, so that the percentage of the children affected was really a considerable one. (Epitome, British Medical Journal, August 26, 1899.)

## STOMACH, FATAL ACUTE DILATATION OF THE.

(By R. Kirch, *Deut. Med. Woch.*, August 17, 1899.) A young man, rather anæmic, but who had never suffered from gastric disturbances, was suddenly affected with syndrome resembling the symptoms of perforation of an abdominal organ; intense pain, vomiting and large fluctuating area of dulness, but no fever. A splashing sound when the patient was shaken confirmed the diagnosis of dilatation of the stomach, and emptying and rinsing the stomach cleared up the symptoms at once, but too late to relieve the compromised heart action. At the autopsy the stomach was found like an enormous bag resting on the floor of the pelvis, the pyloric end reaching up to join the duodenum, and the pylorus permeable for two fingers. The stomach was normal except for its size and the evidence of gastritis that had followed the fatal supper of two plates of "brodsuppe" and a glass of beer. In the course of the gastritis the stomach had suddenly renounced its motor functions and all absorption by the mucous membrane had ceased, inducing intense thirst, while the quantities of water ingested and not absorbed only served to increase dilatation further. (Journal of American Medical Association, September 9, 1899.)

## Stomach, Malignant Disease of.

With reference to growths of the stomach and pylorus I have suggested the following rules upon which to base a positive diagnosis of cancer : (1) If particles of tumour are found (in the wash water or in the tube) which under the microscope reveal the characteristic picture of a malignant growth. (2) The presence of a more or less large tumour with an uneven surface, belonging to the stomach and associated with dyspeptic symptoms. (3) The presence of a tumour associated with frequent hæmatemesis. (4) Constant pain, frequent vomiting, ischochymia, emaciation—all these symptoms being quite permanent and not extending over too long a period of time (six months to a year.) (5) Tumour and ischochymia. (6) Emaciation, ischochymia, presence of lactic acid. (7) Constant anorexia and pains, not yielding to treatment, accompanied by frequent small hemorrhages of coffee-ground colour. (From Dr. Einhorn's paper in New York Medical Journal, July 29, 1899.)

## Stomach, Operations for Malignant Disease of.

It seems clear that radical operations upon the stomach must necessarily be infrequent for various reasons. A case favourable enough to justify so serious a measure as partial resection cannot often present features that are favourable as to time, extent, complications and general constitutional excellence. If partial excisions are thus limited, complete extirpation must be still more infrequently justifiable. Taken altogether, patients with cancer of the stomach do not present an outlook favourable enough for operation once in fifty times. I have seen many cases of suspected cancer of the stomach. I have explored in at least twenty-five. In only one did I find a lesion justifying pylorectomy, and in only one gastrectomy. All the others were clearly so hopeless that nothing radical was attempted. In both the cases operated upon a movable tumour could be felt; in both resection was comparatively easy, and in both recovery from operation was rapid. In many of the cases explored tumours of great size were found, even when before operation none could be felt. The indications for radical operation are thus seen to be narrow. They must be broadened by much earlier exploration based upon the earliest possible diagnosis. When performed at the earliest moment, upon patients whose general strength is but little impaired and in whom the disease itself is situated favourably for wide and thorough dissection, resection of the stomach, whether partial or complete, will present a very different outlook from what it does to-day. (From Dr. M. H. Richardson's paper in the Boston Medical and Surgical Journal, September 28, 1899.)

## Stomach, Treatment of Idiopathic Dilatation of.

The stomach may be washed out with advantage in cases of extreme dilatation and decomposition of its contents, some disinfectant being added to water which has previously been boiled—salicylic acid 1 – 1000 or boric acid 1 – 100. This operation is usually most advantageously carried out in the morning; but if much discomfort is experienced at night, and rest disturbed thereby, the tube may be introduced late in the evening. When there is great gastrectasia and atony some difficulty may be experienced in emptying the stomach. The stomach may also, with advantage, be washed out in supersecretion, with paroxysmal pain or great and continued discomfort. The introduction of the tube should not be resorted to as a routine practice. Most of the subjects of dilatation are neurasthenic, and therefore are not only likely to exaggerate their symptoms through the habit of introspection, but also are prone to magnify the importance of any line of treatment that meets with their approval. Diet presents great difficulties. In the dilated stomach, the function of absorption of fluids, whatever it is in the healthy organ, is inert; fluids introduced remain, and add to the weight on the weakened walls of the organ. Liquids, therefore, should only be given in small quantities at a time—under three ounces with each meal. If thirst is complained of, an enema of tepid water may be taken at bed-time. In cases where there is evidence of much catarrh, a tumblerful of some warm alkaline water should be taken at bed-time, or at least one hour before rising. The diet should be light and nutritious—bread and milk, or porridge, and an egg lightly boiled, usually answer well for breakfast. For later meals, white fish, grilled or boiled, chicken, game, sweetbread, calf's head, and underdone beef or mutton, pounded or minced. Vegetables should not be excluded, and a little sieved potato, or asparagus, cauliflower, or tomato, are usually comfortably digested. Soups, sweets, and oily or fat articles are prejudicial. I believe also that alcohol in all forms is hurtful. In hypersecretion, milk is one of the best articles of diet. I have seen great benefit follow a sea voyage, also a sojourn at some spa, as Bath or Buxton; one gentleman was almost completely restored to health at the former place, under careful diet, cycling, "Aix douche," and massage before breakfast; should circumstances permit, the patient may be sent to Wiesbaden, Kissengen, Nauheim, or Marienbad. (From Prof. T. R. Glynn's paper in the Liverpool Medico-Chirurgical Journal, July, 1899.)

## STOMATITIS, ULCERATIVE.—The Treatment of.

Kissel (*Progrès médical*, September 2) rinses the child's mouth every hour with a three-per-cent. boric-acid solution, and rubs twice daily the entire buccal cavity, and particularly the gums and ulcerated parts of the mucous lining of the cheeks, with a plug of cotton wet with the same lotion. Cod-liver oil is prescribed, and before commencing treatment unsound teeth (*dents tout à fait inutiles*) are extracted. Under this treatment ulcerations are said to disappear in from six to ten days. In private practice, when such minute attention is not possible, the author, after extracting the teeth as before, curettes the ulcerations to the bottom, then with a finger enveloped in gauze he rubs iodoform powder into the ulcerated surfaces. The buccal cavity is cleansed twice daily with a tampon of cotton wet with the same boric-acid solution, and the mouth is rinsed hourly with the same solution. (New York Medical Journal, October 7, 1899.)

## STOOLS, INSPECTION OF THE.

Schutz (*Berl. klin. Woch.*, June 26 and July 10, 1899) thinks that a more careful inspection of the stools passed in intestinal diseases would in many cases give information as to the exact seat of the lesions. The most important consideration is whether or not mucus is present. A small amount may be physiological, as that which coats hard fæcal lumps. Mucus with constipated stools indicates catarrh of the large intestine. To determine from the mucus in diarrhœal stools whether enteritis exists, or there is simply a dyspeptic diarrhœa, is a more difficult matter. Evacuation of pure mucus without fæces, and consolidation of mucus about small fæcal masses, means catarrh of the lowest portion of the intestine. An intimate mixing of mucus and fæces indicates an involvement of the upper part of the large intestine or of the small intestine. The presence of undigested muscle fibres, or starch granules, associated with mucus without fever, indicates disease of the small intestine. Besides these general laws, one may draw valuable conclusions from the consistence, amount, colour, and smell of the mucus. In certain cases simple microscopical or chemical examinations will be necessary to determine the presence of blood, pus, bile, &c. (Medical News, August 26, 1899.)

## TUMOURS, SUPRARENAL.—Symptoms of.

I would draw attention to the following symptoms: (*a*) Shoulder tip pain; this was so well marked in all the three cases that I think it could not have been a mere coincidence, but was probably dependent on the disease. It may be explained by the fact of a small branch of the phrenic nerve passing to the semilunar ganglia. (*b*) Pain radiating from the tumour across the abdomen and to the back, not along the genito-crural nerve. (*c*) Marked loss of flesh. (*d*) Nervous depression with loss of strength. (*e*) Digestive disturbance, flatulence, and vomiting. (*f*) Presence of a tumour beneath the costal margin right or left, at first movable with respiration, but soon becoming fixed; it can be felt in the costo-vertebral angle posteriorily, and can be pushed forward into the hollow of the palpating hand in front of the abdomen. (*g*) Absence of urinary and of gall-bladder symptoms. It will be noticed that these symptoms are common to all the cases, so that when taken together they form a basis on which to make a probable diagnosis. In none of my cases was the peculiar bronzing of the skin characteristic of Addison's disease present, probably because only one organ was affected. (From Mr. Mayo Robson's paper in the British Medical Journal, October 21, 1899.)

## TYPHOID FEVER.—Operative Treatment of Perforation in.

In *The Lancet* for October 16, Dr. Herbert P. Hawkins and Dr. E. O. Thurston report a case of perforation in typhoid fever, with complete recovery after operation. The patient was a child of eleven, who, at about the fortieth day of her illness, gave unmistakeable signs of perforation and peritonitis. The operation was done at once and a perforation found on the anterior cæcal wall. The writers give the following description: "The orifice was about one-eighth of an inch in diameter; it was surrounded by a zone of indurated tissue, and through it a little gas was escaping. A thin layer from the margin of the aperture was excised. It was then closed by a row of Lembert sutures, which produced good inversion of the edges, and a few reinforcing sutures were also passed." Improvement was slow, but, in general, progressive. Two and a half months after the operation the temperature became normal, and now, a year after the onset of the illness, the patient is well, and has no sign of abdominal disease. (Boston Medical and Surgical Journal, October 26, 1899.)

## ULCER, GASTRIC.

The following are Drs. R. B. Greenough and E. P. Joslin's conclusions, based on the study of 187 cases of gastric ulcer occurring at the Massachusetts General Hospital, 1888—1898:—(1) Gastric ulcer is more frequent in Boston than in Chicago, Baltimore, Denver, or San Francisco. (2) It is five times as common in women as in men. (3) The average age in men is thirty-seven years; in women twenty-seven. (4) Hemorrhage was present in 81 per cent. of the cases. It caused the death of 17 per cent. of the male patients, but only 1·27 per cent. of the females. No woman under thirty died of hemorrhage from gastric ulcer during this period. (5) The blood was that of a chlorotic type of anæmia. (6) Perforation occurred in 3·2 per cent. of the cases, and none of these patients left the hospital alive. (7) Of 114 patients 80 per cent. were discharged cured or relieved, but at the end of an average period of five years only 40 per cent. remained well. The mortality at the same time (due to gastric disease) was 20 per cent. Among the males it was 30 per cent., with the females 9 per cent. (8) The excessive mortality of ulcer among men, its occurrence in life a decade later than in women, and the absence of fatal cases of hemorrhage in females, point to a difference of the ulcer in the two sexes. (9) The mortality of 8 per cent., and the failure of medical treatment to effect a lasting cure in 60 per cent. of the patients, indicates the need of surgical intervention in other than emergency cases of this disease. (American Journal of Medical Science, August, 1899.)

## Ulcer, Gastric.

Gastric ulcer is clinically accompanied in most cases by hyperchlorhydria, which, if not the cause, at any rate has great influence in prolonging the condition. Hence the value of treatment directed against the excess of acid, such as feeding entirely by the rectum and the use of the fixed alkalies, as magnesia and carbonate of bismuth, to neutralise the secretion without stimulating it as soda does. Milk, too, is valuable from its rapid combination with the free acid. Thus Frèmont gives an ounce of warm milk with bismuth and magnesia every half-hour for twenty hours, to be increased if the pain is not relieved. Olivetti finds that the plan of giving massive doses of bismuth, 2½ to 5 drachms, every morning on an empty stomach, for which so much has been claimed, produces little change in the motility or secretions of the organ; while Soupault declares that sodium chlorate in divided doses of two drachms daily, given when the stomach is empty, affords great relief in ulcer or hyperchlorhydria. Tripier, to cope with hemorrhage, employs rectal injections of hot water at a temperature of about 120° every few hours, and allows no food to be given by the mouth. (From summary in the Bristol Medico-Chirurgical Journal, September, 1899.)

# AFFECTIONS OF THE URINARY AND GENERATIVE SYSTEMS.

## ALBUMIN, TESTS FOR.

(By P. J. Cammidge, *Lancet*, April 22, 1899.) A series of sixteen selected tests formed the basis of inquiry—viz. heat, heat and acetic acid, heat and nitric acid, cold nitric acid (Heller's test), potassium ferro-cyanide and acetic acid, sodium chloride and acetic acid, Roberts's brine test, salicyl-sulphonic acid, trichlor-acetic acid, picric acid, Esbach's solution, Millard's reagent, Tanret's reagent, Spiegler's reagent, acetic acid in the cold, and acetic acid, and the urine, diluted with two or three volumes of distilled water. After carefully considering the advantages and disadvantages of each, the salicyl-sulphonic acid test is recommended as being the most convenient and free from objection. It is cleanly, fairly cheap, and certain. All forms of albumin, and most albumoses, are precipitated by it at once, the latter being readily distinguished by their solubility on heating. It acts in acid and alkaline urines equally well, and does not precipitate phosphates, urates, uric acid, bile, alkaloids, or drugs. The chief drawback is that it precipitates nucleo-proteids, which at present cannot be directly distinguished from albumin. Cammidge in another paper (*St. Bartholomew's Hospital Journal*, February, 1899) indicates the chief fallacies connected with the different tests, and recommends a routine examination of the urine for albumin testing—first by salicyl-sulphonic acid, then potassium ferrocyanide and acetic acid, and finally, Heller's cold nitric acid test. (From Dr. Kelynack's abstract in the **Practitioner, September, 1899.**)

### ALBUMINURIA.—Diagnosis and Prognosis.

Dr. Dreschfeld thus concludes his article :—Points which must guide us in the diagnosis, and also in the prognosis of the case, I may mention :—(1) The age of the patient. Albumin, if found in a person over 40, is of much more serious import than when it occurs in younger persons, and if it is a question of life assurance, such persons, even if in other respects the albuminuria appears to be functional, should not be accepted. (2) The family history. A gouty family history, and also a family history of Bright's disease, should cause us to be guarded in diagnosing simple or functional albuminuria. It is also important to enquire into the habits and occupation of the individual, and whether the patient has recently had scarlet fever or diphtheria. (3) Cardio-vascular symptoms. We note here the pulse-tension and the heart. In cases of functional albuminuria we may meet with a low tension, if the individual is anæmic or neurotic. We meet with high tension in those cases where oxalate of lime or uric acid is found in the urine. A persistent high tension must be looked upon as indicative of granular kidney. In all cases of albuminuria the heart should be carefully examined, and if there be signs of cardiac hypertrophy, such as displacement of the apex beat to the left, an accentuation of the second aortic sound, reduplication of the second sound, or if the sounds show the galop rhythm, then we can no longer consider the case as one of functional disease, as all these symptoms point to chronic Bright's disease. (Medical Chronicle, July, 1899.)

### ANURIA, NEPHROTOMY IN SURGICAL.

Nélaton (*La France Mdiècale et Paris Mêdical*, No. 22, 1899) performed a cœliotomy for the relief of what was supposed to be a cyst of the ovary. This cyst was, however, found to be postperitoneal, and was in reality a hydronephrosis. The kidney substance was practically completely atrophied ; therefore the tumour was removed and the abdomen closed. On the eighth day the patient suffered with severe pains in the right flank ; it was the left kidney which had been taken away. The attack was so like kidney colic that morphine was given. On the evening of that day only a few drops of blood-stained urine was passed. Ureteral catheterisation was practised, but without effect. Therefore as the patient had suffered from anuria for forty-eight hours, a palliative nephrotomy was practised. This showed nothing abnormal. A tube was placed in the pelvis of the kidney, and in a few hours the urine began to flow through it. Seven days later some of the urine appeared in the bladder. For several weeks the secretion was extremely irregular, varying from an ounce to four pints a day. After that it became fully re-established. (Therapeutic Gazette, September 15, 1899.)

## BRIGHT'S DISEASE, CHRONIC. — Opium and Mercury in.

The headache of chronic Bright's disease with high blood pressure is very generally increased by the use of such increasers of tension as caffeine, digitalis and squill, but not always. The old practitioners taught that opium and mercury were agents to be avoided in cases of renal disease. Of the unwisdom of this advice in regard to the use of morphia we have had abundant illustration, for a better remedy to alleviate suffering in uræmia associated with fair blood pressure does not at present exist. I strongly suspect that the use of opium was condemned from the seemingly baneful effects which follow its employment in acute nephritis and large white kidney—cases with low blood pressure and a tendency to anuria, cases in which giving enough morphia to cause a drowsiness would be obviously ridiculous. Even in cases of anuria an infinitesimal dose of morphia, such as would cause only nerve and tissue stimulation, might prove beneficial. In regard to the non-use of mercury, the advice is decidedly good; yet there are cases, I cannot say conclusively of primary Bright's disease, in which mercury must be used to get rid of dropsy. (From Dr. Angel Money's paper in the Australasian Medical Gazette, September 20, 1899.)

## CYSTINURIA, FAMILY FORM OF.

The appearance of cystin in the urine has been attributed to disturbances in metabolism comparable with those that give rise to diabetes and gout. Some recent observations by Cohn (*Berlin klin. Woch.*, June 5, 1899) rather lend support to the former than this view. This observer reports the case of a girl, aged 7½ years, who had been operated on several years previous for tuberculosis of the right knee-joint. For a year increased frequency of micturition had been noticed, and pain in the region of the bladder was complained of. These symptoms had increased in severity within three months, and the mother had observed that the urine appeared turbid and emitted a disagreeable odour. Exploration with a sound disclosed the presence of a calculus in the bladder, which rectal examination indicated to be the size of a walnut. Suprapubic cystotomy was performed, and a friable and rough stone found and extracted. On chemical examination the calculus was found to consist of cystin, and subsequent examination of the urine from the patient showed that it also contained cystin. Investigation with regard to the presence of putrecin and cadaverin yielded entirely negative results. Further inquiry elicited the fact that of eleven other members of the family, of whom nine could be examined, cystinuria was found to exist in six, but in none other than that reported could a calculus be detected. (Journal American Medical Association, August 5, 1899.)

## HÆMATURIA IN RENAL TUBERCULOSIS.

Hæmaturia is often the first indication of danger and induces the patient to seek advice, and in many instances, unless repeated and most minute examinations are made, the medical adviser may find it difficult to arrive at a satisfactory explanation of the symptoms. In tuberculous disease the urine presents very marked variations in the different stages of the malady; in the initial phases of the affection the presence of the virus induces a congested condition of the organ, and hemorrhages occur which are analogous to the early hæmoptyses of pulmonary tuberculosis, and are probably due to a local interference with the circulation arising directly from the intimate relationship of the tuberculous deposit with the vascular supply. (From Dr. David Newman's paper in The Lancet, August 26, 1899.)

## MASTITIS, GANGRENOUS.

According to H. Roger and Garnier, who recently reported a case of this sort to the Paris Society of Biology (*Gazette hebdomadaire de médecine et de chirurgie*, July 20), gangrenous inflammation of the breast has not before been observed. Their case was in a lying-in woman who was attacked with scarlet fever. A special micrococcus was found in the pus, similar to micrococci described by the veterinarians as occurring in the mastitis of animals in the course of lactation, but not proved to be identical with any of them. (New York Medical Journal, August 19, 1899.)

## PHOSPHATURIA.

Prof. Klemperer treats of this important subject in the *Therapie d. Gegenwart*, August, 1899. By phosphaturia is meant the excretion of a urine that is rendered milky by precipitation of earthy phosphates. Phosphate of lime is always deposited when the relations of acid phosphates are not in proportion to the alkaline, in other words, when the normal reaction of the urine changes to the alkaline. Vegetable food makes the urine alkaline, as the vegetable acids become converted into carbon salts. It is clear, therefore, why phosphaturia comes on after free indulgence in vegetables and fruit. When a large quantity of hydrochloric acid is secreted in the stomach, there is less at disposal for the urine; after a hearty meal, even if of meat, if urine is passed one or two hours after, slight phosphatic cloudiness is easily noticeable. As nervous people pass urine more frequently than others, occasional phosphaturia will probably be more frequent with them than others. It is further known that after violent vomiting, and after washing out of the stomach, when a large quantity of hydrochloric acid is expelled, phosphaturia is liable to occur, and also in cases of dilatation of the stomach and motor insufficiency, when the acid contents are retained an undue length of time. All these conditions are met with in neuræsthenics, and it is therefore understood why phosphaturia is frequent with this class of patient. The author has treated his patients with a free and mixed dietary, and independently of means has recommended them a large quantity of water, especially frequent acidulated drinks. He has frequently made use of electricity and hydrotherapeutics. He has sent many to the sea-side, and some to mountain residences. He has impressed upon them that they suffer from a nerve disorder, the treatment of which will be materially aided by great regularity of living and self command. (From abstract in Medical Press and Circular, November 1, 1899.)

## URETERS, CATHETERISATION OF.

It must be remembered, that the recent labours of Caspar and Nitze in Berlin and of their followers all over the medical world, have made it evident that catheterisation of the ureters in the male is very often, certainly in a majority of cases, not only possible but comparatively easy. The collection of the urine directly from a ureter gives much more reliable information than does even an exploratory lumbar incision, since the external surface of the kidney when exposed to inspection may be perfectly healthy, and yet a tuberculous focus exists in the interior of the organ. Communications of pathologic processes occur much more readily with the pelvis of the kidney than they do with its external surface. When the tuberculous foci are very limited in extent and therefore most hopeful for operation, they will often permit the discharge of tubercle bacilli into the urinary passages. The chances for early diagnosis and operation are rendered with this method very promising indeed. (From a leading article in the Medical News, August 12, 1899.)

## URINE, THE TOXICITY OF NORMAL.

(By W. P. Herringham, *Journal of Pathology and Bacteriology*, vol. vi., part ii.). The author experimented on rabbits. No anæsthetic was used. The urine to be injected is filtered clear and neutralised. Generally injected at room temperature into large auricular vein. The fine syringe needle is connected with a burette by tubing, and a steady flow (10 c.cm. per minute) maintained by a hand air-pump. Injection causes contraction of pupils, drowsiness, muscular twitching in neck; often the bowels act, sometimes loosely, and a little urine (up to 30 c.c.) passed. Respiration, with or without previous acceleration, gradually falls in rate. Embarrassed expiration ensues, and rate of respiration falls till death. Difficulty in breathing is accompanied by restlessness, then convulsions, and generally death in first fit. The author found that no other factor than *potassium* varied in harmony with the toxicity. The addition in quantity of pigments to normal urine did not increase its toxic value. There is no necessary connection between urine-injection and uræmia, although the same symptoms are found in both conditions. (Glasgow Medical Journal, November, 1899.)

## PHLORIDZIN GLYCOSURIA AND THE RENAL FUNCTIONS.

(By M. Delamare, *Gaz. d. hôp.*, Paris, October 28, 1899). In healthy persons, in whatever manner the drug acts, a dose of 5 grms. of phloridzin, hypodermically, causes glucose to appear in the urine in from half to one hour, and to last for three or four hours. The total quantity of sugar excreted usually equals 1 to 2 grms. If, however, the kidneys be diseased, the glycosuria varies in amount and duration. Its use affords very similar information as to renal insufficiency and functional disturbance as methylene blue, but as its action is more complex the results do not always tally. Most cases of acute and chronic nephritis exhibit diminution, not a few complete absence, of sugar in the urine after phloridzin. A minority of such cases excrete more than the average in healthy persons. Variations in the amount of sugar induced, or in the length of time occupied in its excretion, almost always imply some grave organic kidney lesion, which can generally be determined by the presence of other signs, or some functional renal disturbance, which may give rise to no material sign, and which may be of little or of great importance in the conduct of individual cases. (From abstract in Edinburgh Medical Journal, December, 1899.)

## UROTROPIN IN URINARY DISEASES.

Ehrmann (*Wiener med. Presse*, June 18, 1899) has employed urotropin with very satisfactory results. In nine cases of periurethral abscess and cystitis after gonorrhœa, where the urine was alkaline and ammoniacal and contained gonococci, and where opening the abscess and washing out the bladder had failed to cure, urotropin in doses of 7½ gr. three times a day brought about the desired result in three weeks. Five cases of bacteriuria following chronic gonorrhœa were cured permanently. In one case, in spite of urotropin, relapses constantly recurred. Here there was probably a small fistulous communication with the rectum. In chronic posterior urethritis, with cloudy urine, which so long resist deep injections and irrigation of the posterior urethra and bladder, urotropin acted excellently, the urine clearing on the third or fourth day after its administration. Its action appeared to be specially marked in posterior urethritis, so that after this was cured any remaining anterior urethritis could be easily removed by ordinary urethral injections. These observations are founded on 32 cases. Urotropin also acts well in tuberculous and typhoid cystitis. In the cystitis of enlarged prostate it lessens the need for vesical irrigation, so that, for instance, in a case where formerly they had been constantly employed, after urotropin they could be omitted for from two to three months. The writer thinks these observations show that urotropin is one of the few of the newer drugs which will retain a permanent place in therapeutics. (Epitome, British Medical Journal, September 2, 1899.)

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## GENERAL SURGERY, AND AFFECTIONS OF THE BONES, JOINTS, &c.

### ANÆSTHESIA.—Nitrous Oxide and Ether.

The following is taken from Dr. S. Osmond Goldan's paper :— The use of laughing gas as a preliminary to ether is certainly a superb method of anæsthetisation. The advantage is the absence of any unpleasant excitement and irritation due to ether—in fact, there are no stages to the anæsthetic ; the patient simply quickly and quietly goes to sleep. The anæsthesia is induced more rapidly than with chloroform, the time varying, according to the type of patient, from two to five minutes. This element of time is a great advantage from the surgeon's standpoint, and one can almost always accurately gauge the time in which the patient will be ready for operation. The quantity of ether necessary to induce anæsthesia will be found surprisingly small, and the unpleasant sequelæ following narcosis will consequently be lessened. Two different plans may be employed : First, using the gas to complete anæsthesia, and then replacing it quickly with ether in a closed inhaler, accomplished with the American apparatus. Second, using the gas with progressively large quantities of ether until anæsthesia is complete, and then discontinuing the use of the gas. This is accomplished without change of inhalers; for this purpose the Clover-Hewitt (English) apparatus is preferable. At the same time this permits of the use of the gas bag as a supplemental air bag into which the patient breathes. The indications for the use of nitrous oxide and ether are those for ether in general; the combination should not be given where high arterial tension is undesirable, or in alcoholism and drug habits. Here chloroform will be found preferable as a preliminary to ether. The inhalation should be conducted, in general, as when giving nitrous oxide alone, and when the patient is etherised the same care is essential as if the gas had not been used. Nitrous oxide does not in any way lessen the dangerous action of ether when used in conjunction with it. (New York Medical Journal, August 5, 1899.)

## ANEURYSMS TREATED BY EXTIRPATION.

The following conclusions seem to be justified: (1) The operation by extirpation is the most scientific of all methods thus far proposed for the treatment of aneurysms of the extremities. (2) It is by far the safest method. (3) It gives a greater percentage of cures and a less pencentage of deaths than any other method. (4) The operation by extirpation should be resorted to without previous attempts at cure by any other method. (From Dr. J. C. Oliver's paper in the Journal of the American Medical Association, September 9, 1899.)

## ARTHRITIS DEFORMANS.—The Operative Treatment of.

Akermann, of Stockholm (*Centralbl. f. Chir.*, Leipzig, October 7, 1899), in writing on this subject, refers to the necessity of defining what is meant by arthritis deformans. One must first exclude tubercular, syphilitic, gonorrhœal, septic, neuropathic, and gouty arthritis. There still remain chronic rheumatism and arthritis deformans, of which the former represents a clinical diagnosis and the latter a pathologico-anatomical result. He recommends the restriction of the term, chronic articular rheumatism, to cases in which there exists some obvious connection with acute or subacute rheumatism. Including those operated upon by the author himself, he has collected 48 cases of arthritis deformans, subjected to operation (chiefly excision)—hip, 14; knee, 19; shoulder, 5; elbow, 7; and wrist, 3. In a certain proportion of these cases, a very satisfactory result was obtained. It is therefore recommended to have recourse to operative interference in cases in which conservative measures have failed and in which there is no contra-indication, such as the age of the patient, depraved general health, or the polyarticular character of the malady. The abstractor can fully bear out the author's contention, for he has operated in several cases of arthritis deformans of the knee with decided and permanent benefit. (Dr. Thomson's abstract in Edinburgh Medical Journal, December, 1899.)

## BURNS.—Treatment of Collapse in.

An excellent case appears in the *Lyon Médical* (May 21, 1899) concerning a child who had been burnt severely and was treated by the transfusion of saline solution. The burn was one of the second degree, and involved probably a third of the surface of the body, an occurrence which would almost certainly have proved fatal under the old *régime* in a day or two. Seven injections of 250 grms. of saline solution were made into the veins during the following fortnight, and the child lived for a month, finally succumbing to pneumonia, although the local lesions were doing well. It has been objected that a rapid elevation of arterial tension might be dangerous in patients whose lungs and kidneys are engorged, but this is met by introducing the solution very slowly, so that no great rise of pressure is caused. The object of the infusion is to favour diuresis, to facilitate the elimination of the toxins, whether by the kidneys or bowels, and to sustain the general condition. It is a plan which has proved useful in many septic troubles, and certainly children who have been badly burnt and are in a condition of collapse should be given this extra chance. (From Mr. Careless's abstract in the Practitioner, July, 1899.)

## CANCER, EXPERIMENTAL PRODUCTION OF.

(By H. Lambert Lack, *Journal of Pathology and Bacteriology*, 1899, p. 154.—A preliminary note.) For some years the author has held the view that carcinoma is simply the result of the entrance of the normal epithelium of the body into the lymphatic spaces, and its continued growth therein ; his reasons being that the epithelium of cancer is practically identical with the normal epithelium of the body, that the spread of cancer always takes place along the lymphatics in the direction of the lymph flow, and that carcinoma is infectious, the epithelial cells themselves in all probability being the infective agent. In order to put this view to test, the following experiment was made : The ovaries in a rabbit were incised, the cut surfaces scraped, and the juice containing free epithelial cells thus obtained, was allowed to enter the peritoneal cavity. The animal remained well for nearly a year, then became thinner and weaker, and dyspnœic, and was killed. On examination numerous white, hard nodules, varying in size from a pin's head to an olive, were found in the mesentery, liver, uterus, diaphragm, parietal pleura, lungs, and mediastinum. In structure these nodules had all the characters of ovarian cancer, consisting of alveolar spaces lined by one, or occasionally more, layers of columnar epithelial cells. Although the view held by the author differs but little, if at all, from the theory advanced long ago by Thiersch, still the striking result of his experiment cannot fail to be of widespread interest, not only from the scientific standpoint, but also from the standpoint of the operative gynæcologist. The wide dissemination of the proliferating ovarian cells is perhaps the most interesting feature of the result, since local infection of the peritoneum by cells escaping from ruptured ovarian epithelial growths is not unknown. The precise significance of the experiment for the etiology of cancer in general it would be difficult to estimate, and whilst not wishing to appear too critical over this preliminary note, one cannot fail but be struck by the fact that the author's views are still open to the same criticism as has been meted out to those of Thiersch. There still remains to be explained why the ordered methodical growth of cells in their normal relations should, on having a way opened up to the subepithelial lymphatic spaces, assume a type of proliferation as rapid as it is irregular. If mere alteration of environment is to suffice, then skin grafting, especially those methods which advocate the removal of granulations, must assume a danger undreamt of in the past. (Dr. F. Craven Moore's abstract in the Medical Chronicle, November, 1899.)

## CATHETERS AND BOUGIES, THE STERILISATION OF.

Nicoll (*Annals of Surgery*, June, 1899) has made a careful critical study of the different forms of bougies and catheters upon the market and of the various methods of sterilisation which have been proposed. The results arrived at from this exhaustive research are not altogether definite, nor is he inclined to be dogmatical; they are, however, of great value to those who constantly employ these instruments. He finds that the ordinary bougie, either metallic or soft, can be rendered sterile by washing carefully and drying with a towel or gauze, rendered sterile by boiling. The use of antiseptic solutions is unnecessary; they injure the outer texture of the instrument, and this makes infection more liable. As soon as they become scratched or injured metal bougies should be polished and re-plated, while soft ones must be thrown away. The problem in connection with catheters is rendered more difficult by the inability to reach their interior and the difficulty experienced in making this smooth in the manufacture. Metal or Jaques' soft rubber catheters can be rendered positively sterile by boiling or washing, and soaking in strong antiseptic solutions that do not injure them. It is, however, impossible, to render gum-elastic or varnished catheters sterile when for any reason they have to be employed, as where the surgeon cannot himself use a metal instrument for the patient, and a stiff one is required. A gum-elastic catheter that is smooth and well finished inside may be rendered reasonably secure by having the patient hold it for a time under a tap and then lay it aside immersed in a boric solution, a weak perchloride, or other weak antiseptic solution. He has made it his rule to use bougies in preference to catheters wherever it is possible. Where a catheter has to be employed, he uses a metal or a soft rubber one. When the urine is purulent or septic the catheter must be destroyed if it is not metal or soft rubber. Where there is not much pus or infection it can be washed, immersed in antiseptic solutions, and steamed internally. (American Journal of Medical Science, October, 1899.)

## HIP DISEASE.—Treatment of.

Dr. B. E. McKenzie thus summarised his views : (1) Hip-disease is a local manifestation of a constitutional disease. (2) Early operative treatment is seldom justifiable. (3) When softening can be determined the surgeon should operate and obey indications, observing all care not to needlessly injure the mechanical integrity of the joint. (4) In the subsequent management of the wound asepticism and antisepticism must be carefully observed. (5) From the earliest moment efficient protection for the joint should be secured and constantly maintained by a well-fitting mechanical appliance. (6) A proper splint should fulfil two indications, *i.e.*, secure rest for the affected joint and prevent deformity. No effort should be made to employ the splint as a crutch ; ordinary crutches should be used. In the adjustment of the splint the knee should be slightly flexed. (7) Constitutional treatment is indicated as in other tubercular affections. Great emphasis should be laid on obtaining the freest exposure to direct sunshine and fresh air. Free use of iodoform is a valuable adjunct. (8) After excision a perfect recovery never follows, because the mechanical integrity of the joint is not preserved. (9) Following mechanical and constitutional treatment, complete restoration of function is sometimes obtained. (10) Even when breaking down of tissue occurs which necessitates incision, there is sometimes a perfect restoration and frequently a highly useful return of the joint function. (Medical News, August 5, 1899.)

## JOINT AND BONE FIXATION.

In this paper is briefly described a method for safely and quickly producing fixation of the joints and bones. The fixative material employed is wood fibre reinforced with gauze. It is made in large sheets of two thicknesses. It is adaptable to all cases of surgical splinting. The fixation is produced by moulding upon the limb a properly shaped piece of the splint material (this piece may be termed the "splint-blank") and bandaging it snugly to the limb. When moulded and bandaged properly the moistened wood fibre produces immediate fixation. Sometimes, when great strain on the material is apprehended, as, for example, in hip-joint fixation, it is advisable to apply a double splint-blank. Before describing the technique in detail of this method of fixation, I shall define a term already mentioned—splint-blank. The term is newly coined. My apology for it is that it is a term of convenience in the descriptions that follow. When it is desired to immobilise a limb or a part of it by this method we cut a paper pattern so as to embrace the limb in the same manner we wish the completed splint to embrace it; this paper pattern we lay on a sheet of the splint material and we cut from the sheet a piece following the outline of the pattern; this piece is the splint-blank; when moistened with water and bandaged over the limb it forms the splint. A splint-blank, therefore, is a piece of splint material cut in such fashion that when moistened it can be bandaged over the part for which it is intended, producing fixation of the part. (From Dr. E. A. Tracy's paper in the Boston Medical and Surgical Journal, August 31, 1899.)

## ROENTGEN RAYS.

Seiz (*Therapeut. Monatshefte*) draws attention to the mistakes which can be made in interpreting the results of the fluorescent screen or the skiagram. These are more likely to arise with the former. In one case a girl, aged 13 years, had an outward dislocation of both bones of the forearm, a skiagram was taken twelve days after its reduction. It showed that the position of the joint was normal, but that apparently there was a separation of the tip of the olecranon. However, there was no clinical sign of this lesion, and the appearance was doubtless physiological, and due to the fact that the epiphysis of the olecranon was still joined to the shaft by cartilage. Without clinical examination a fracture of the tip of the olecranon might have been diagnosed. In a second case, a boy nine years old, fractured the shaft of the right femur. It united with an inch of shortening. However, the skiagram showed what appeared to be a shortening of nearly three inches! After such experiences, Seiz concludes that for a true interpretation of a skiagram a clinical knowledge of the case is also necessary. It is also necessary that the distance of the object from, and its position with relation to, the illumination should be known. Although such false impressions are the exception, they might be of the greatest importance, especially in actions for damages, and it is most necessary, both for his own and others' protection, that the surgeon should inspect every skiagram most carefully, before allowing it to be seen. (The Indian Lancet, August 16, 1899.)

## SURGERY, ASEPTIC versus ANTISEPTIC.

Mr. T. R. Jessop thus concluded an address upon this subject before the Manchester Clinical Society :—I would like to suggest certain propositions which may form the basis of our discussion. (1) That septic infection is the most universal, and at the same time the most potent influence in the prevention of the healing of wounds. (2) That a state of complete asepsis should be our supreme aim in all operations. (3) That when an aseptic condition has been brought about, the further application of antiseptics is useless, and may be harmful. (4) That attention should be devoted equally to the rendering aseptic of the patient's skin, at, and around the site of operation, to the instruments employed, to the ligatures, sutures, and dressings, and to the surgeon's, his assistant's, and to the nurse's hands, arms, and dress. (5) That an operation wound—clean and non-infected by sinuses or other causes—will heal best when washed only with water sterilised by boiling. (6) That the germs contained in the atmosphere of a clean theatre are ordinarily so attenuated as to call for no special provisions. (Medical Chronicle, June, 1899.)

## SYPHILIS.—Treatment of.

To sum up my conclusions, I should say that the following selection from the accepted rules of treatment appear to be rational :—Mercury should be used alone in primary and secondary syphilis, unless severe lesions are present. Treatment should be begun at the earliest possible moment. The drug should be given in a form easy to take, and not irritating to the stomach. It should be carefully pushed to the toleration point indicated by slight touching of the healthy gums, with constant weight. When the toleration point is reached, the mercury should be kept up to that point throughout the course ; never higher, lest the patient be poisoned ; never lower, lest sporing instead of destruction of the microbes occur. The course should continue for two years, that being the period of natural cure or real latency. Iodides should not be used as routine treatment in the primary and secondary stages, because by removing the toxin, the phagocytes will be no longer attracted to the microbes, and encapsulation and destruction will be hindered. Iodides, together with mercury, to be used in increasing doses in the gummatous stage, later a mild mercurial course is advisable. In intractable cases, with chronic blood poisoning and severe lesions, a large quantity of water taken daily facilitates the excretion of the toxin, and in the shape of Zittmann's decoction is undoubtedly very effectual. Finally, it is my conviction that the point of central importance in the treatment of syphilis is to push the mercury to the toleration point, and to keep it there throughout the case. This is the final sum of my experience. (From Mr. A. H. Ward's paper in the British Medical Journal, October 21, 1899.)

## VENA CAVA.—PARTIAL RESECTION, FOR CARCINOMA.

Manteuffel (*Centralbl. f. Chir.*, July 8, 1899) removed the carcinomatous right kidney of a man aged 49 years. The vessels were legated in two places and divided. The kidney remained attached to the vertebral column by its lower pole. A careful examination showed that the carcinoma had grown from the lower end of the kidney through the wall of the vena cava, and that masses were floating like sea-weed in the venous stream. The kidney was removed, the vein compressed above with an artery clamp whose jaws were covered with rubber tubing, and while assistants held the vein below, the affected portion of the wall was removed. The opening so made was 9 cm. (3·6 in.) long, and 2.5 cm. (1 in.) wide. Blood from the left renal vein spurted freely from this opening, but it was held in check by compression until two rows of stitches had been put in place. There was still a little leakage, but this ceased as soon as the artery clamp was removed and the normal venous flow was resumed. The compression of the cava had lasted fifteen minutes, during which time the pulse was scarcely perceptible. In two minutes after the removal of the clamp it was full and strong. The patient suffered somewhat from collapse in the first twelve hours, but made a quick recovery, and was out of bed in eighteen days. There were never any symptoms which indicated circulatory disturbance of any character. (Medical News, September 9, 1899.)

## AFFECTIONS OF THE SKIN, &c.

**CHRONIC ECZEMA IN CHILDREN.—Treatment of.** The hardened crusts must be softened by sweet oil or some antiseptic solution applied on sheet lint for about twenty-four hours. Bichloride of mercury (1—10,000), or carbolic acid (1—100) are advised, but carbolic acid should be avoided, if the disease is extensive. Then use Lassar's paste. Its composition is as follows: Salicylic acid, 1 part; zinc oxide, 25 parts; starch, 25 parts; vaseline, 50 parts. In very young babies this may be diluted with equal parts of ungt. acid. boric. or vaseline. This paste is rubbed into the skin, and the part covered by a bandage. Where the face is affected, a mask of lint is employed. The dressing is renewed once a day, the skin having been first completely cleaned off with pledgets of cotton covered with the boric acid ointment or vaseline. This is to remove the paste that has been applied the previous days, so that a fresh supply can be rubbed in.—H. D. Chapin in the *Post Graduate.* (Pediatrics, November 1, 1899.)

**HYDROA GESTATIONIS.** (From Dr. Arthur J. Hall's paper.) The general characters of the affection may be stated as follows: (*a*) It is painful.—When about to appear in any part it is preceded by burning pain and irritation which continues in intensity whilst the rash develops, and if bullæ form is only relieved by their bursting or being scratched open or pricked. (*b*) It is multiform.—The most striking appearance from a diagnostic point of view is due to the large bullæ which occur here and there, and which at first gave me a clue to the diagnosis. But these are by no means the most extensive lesions. There are a large number of quite small vesicles irregularly distributed. There are also diffuse patches of erythema, which are accompanied or followed by deep brown pigmentation (with here and there papules). This deep pigmentation is always most noticeable on the abdomen, which is almost entirely covered in front with a large brown erythematous patch on which there are not, nor have there ever been, any vesicles or bullæ. The bullæ vary very greatly in size; they were never before anything like the size that they have been in the last outbreak. (*c*) It appears in successive outbreaks.—Besides its recurrence at each pregnancy and shortly after each confinement—with a total disappearance during the intervals—each attack consists of a series of outbreaks. (*d*) It is more or less symmetrical. (*e*) It is herpetiform.—Some of the vesicles and of the bullæ tend to cluster together in groups like a herpes. (Sheffield Medical Journal, July, 1899.)

## LUPUS.—Treatment of, by Finsen's Light Method.

The leading principle of the apparatus is the exclusion of the heat-rays, and this is accomplished by allowing the sunlight to pass through a short cylinder with glass ends, of about fifteen inches in diameter, which contains cold water coloured blue by sulphate of copper. From this chamber the chemical rays alone emerge, and these are focussed on the diseased part of the patient's skin. This is a brief outline of the essentials in the ideal Finsen apparatus, but the use of such an apparatus is limited to the few sunny months in the year, and during the rest of the time he has to resort to electric light indoors and a more complicated apparatus. The light is obtained from an arc lamp of between 50 and 80 ampères, the rays from which are allowed to pass through a telescope-like tube containing distilled water, and are then focussed through a glass-ended cylinder pressed on the lupus patch through which cold water is circulating. This latter chamber serves the double purpose of excluding the heat-rays and of producing the requisite anæmia of the part by pressure. By having four to six of these telescope-like tubes radiating from the one arc lamp it is possible to treat the same number of patients at one time. The patients are made to lie or recline in a comfortable position, and each patient is so placed that the rays emerging from one of the tubes can be focussed on the cold pressure apparatus, which is fastened over the diseased patch of skin. The patients are under treatment for about three-quarters of an hour every day. At the time of application of the rays the patients complain of no pain and no form of anæsthesia is required; but after a few hours the diseased area shows a positive reaction, which results after prolonged application of the rays in a more or less complete resolution of the lupus nodules and of the surrounding infiltrated tissue. The cases which Dr. Bang kindly gave me the opportunity of studying, and the photographs of lupus patients before and after treatment with the rays, showed that there was very slight scarring produced by the treatment, and that when cicatrices were present they had a markedly smooth and even appearance. Finsen, in his statistics of the "Lichtinstitut" for 1898, reports 81 cases of lupus vulgaris treated by the chemical rays, in all of which there was a decided improvement and a constant positive reaction. (From Dr. J. M. H. Macleod's paper in the British Journal of Dermatology, September, 1899.)

## PARAFORM.

Meuse (*Dermatol. Centralbl.*, April, 1899) recommends paraform in the treatment of warts and also of papular syphilides. It is said to be especially useful in palmar psoriasis. Its action extends deeply into the skin. The preparation advised is—paraform 8 parts, collodion 27 parts; to be painted on thrice daily. The epidermis generally peels off after two or three days. (Epitome, British Medical Journal, November 11, 1899.)

## SCLERODERMIA.—Thiosinamin in.

Hebra (*Archiv f. Dermatologie und Syphilis*, Bd. xlviii., Heft 1), at a meeting of the Dermatological Society of Vienna, presented three cases of sclerodermia which had been treated by hypodermatic injections of thiosinamin. The first patient had received twenty-four injections, and the skin, which in the beginning was tense and shining, had become approximately normal. In the second patient, after twenty-four injections, the hard circumscribed area diminished in extent and resistance. In the third patient, improvement was manifest after the fourth injection. Half a Pravaz syringeful of a 15 per cent. alcoholic solution was injected every second day in the interscapular region, the injections being made deeply, in order to avoid the production of superficial necrosis of the corium. (American Journal of Medical Science, September, 1899.)

## SKIN DISEASES.—Dusting Powders in.

Open ulcers, whether specific or non-specific, are often greatly benefited with dusting powders. Certain precautions are needed. Boracic and salicylic acids often cause great pain. Calomel is rarely safe to apply to any but the syphilitic sore, whether hard or soft. Iodoform is excellent for both ulcers, whether specific or non-specific. Europhen is somewhat less active as a substitute, but has not the offensive smell of iodoform. A plan used by the writer in treating non-specific ulcers is to incorporate a bland powder (*e.g.*, starch and boracic acid), with a pad of absorbent boracic wool, applied as a dry dressing. The usual way of applying these external applications is to dust the material on with a swan's down pad or a pledget of cotton wool; or it may be peppered over the surface from a small dredger. One of the most satisfactory ways of procuring prolonged contact with the skin is by Unna's plan, by which the powder is sewn up in long flat bags, and bandaged to the skin. (From Dr. David Walsh's paper in the Medical Press and Circular, November 8, 1899.)

## SKIN ERUPTIONS.—Blue Glasses in the Recognition of.

Jullien (*Annales de Derm. et de Syph*, January, 1899) has employed this method of examination for three years, using binocular cobalt glasses. He considers it best to shun a very bright light, that of cloudy weather being preferable. The glass ought to be placed as near the eye as possible in order to avoid a diffusion of the rays, and to separate the eye from all outside rays. Jullien has found that the elements of a syphilitic roseola may be detected without doubt some time before they are distinguishable to the naked eye. The advantage of this is seen when it is necessary to establish the diagnosis or to begin treatment as early as possible. There is a considerable proportion of cases in which no symptoms are observed after the chancre, until perhaps several years have elapsed, when the ordinary late lesions may appear. Jullien surmises that in most of these instances an early roseola may be detected by means of blue glasses. An eruption may also be detected in this way some time after it has become invisible to the naked eye. Syphilides may thus be detected at the end of six months, and Jullien has often recognised them at the expiration of a year. Slight scars, which cannot be seen ordinarily, may also be detected by this method. (From abstract in the Boston Medical and Surgica Journal, October 5, 1899.)

## WARTS.—The Treatment of.

(By M. du Castel, *Journal des Praticiens*, No. 34, p. 535). In very slight cases, and when the warts are very numerous, soft soap is the best application. A thin layer of the soap of the thickness of the back of a knife is spread on a piece of linen, which is then applied to the affected part, and kept on all night. The next morning the part is washed with warm water, and it is dusted over with talc powder or oxide of zinc. The same night the application of soap is repeated, and so on until the warts are completely removed. The warts can be scraped with a blunt instrument from time to time. If the soap causes too much irritation, its use must be discontinued for a few days. Kaposi's paste is useful; it consists of: Sulphur sublim. 20 parts; glycerini, 50 parts; acid. acetic. glacial, 10 parts. It should be used like the soft soap. For warts of the face, salicylic acid ointment may be used of a strength of from 10 per cent. to 20 per cent., or a plaster of the same strength may be used. Salicylic collodion is a very convenient method; its composition is: Acid. salicylic, 1 part; collod. flexil., 8 parts. (Treatment, October 26, 1899.)

## AFFECTIONS OF THE EYE, EAR, THROAT, &c.

### ACCIDENTS TO THE EYE OCCURRING IN TRADES.

At the sixty-seventh annual meeting of the British Medical Association, Dr. Simeon Snell, president of the section, said :—"No one can have seen much of ophthalmic practice in a large industrial centre without being painfully aware of the enormous destruction to sight occasioned annually by accident. It is difficult, of course, to obtain anything like accurate statistics. It is necessary to exclude entirely all reference to accidents caused in every-day civil life, much as could be said about their prevention." He offers the following suggestions as to the means for protection to workmen :—(1) The grinder will find that large glasses made of plain glass, or indeed his own spectacles, should his refraction require their use, will afford great protection. Or he may use other protectors made with glass in front and gauze surrounding it. (2) The use of protectors should be compulsory for those workers in iron or steel whose employment renders them liable to be injured by iron or steel splinters, or who are exposed to danger from molten metal. The gauze eye-shield described will, Dr. Snell believes, answer the purpose well. The cost is low, and it is worth the employers' while to supply their men with them. Other means to be adopted are :—(*a*) The use of a pneumatic chipper whenever practicable, and (*b*) the proper arranging of the men at their work ; and the use of screens so as to avoid injury to their fellow workmen and the passers-by. (Medical Age, August 25, 1899.)

### CORNEAL ABSCESS.—Treatment of.

In cases of corneal abscess, and of infiltrated corneal ulcer, in any position, the condition sometimes does not improve under the hot fomentations and atropine, and a change to eserine will often produce an immediate beneficial effect. You may say such a course may be warranted as regards the cornea, but that in an extensive corneal affection the iris also is probably involved, and the contraction of the pupil due to eserine will aid in producing extensive adhesion of the iris to the lens capsule. Remember, however, your prime object is to save the patient's eye, and if it becomes a question whether the iris is to become adherent or the cornea is to be destroyed, the iris must be neglected ; because an eye that loses its cornea will never be of any use, whereas adhesion of the iris to the lens capsule admits of moderate vision, and of much improvement by subsequent operative interference. (From Mr. Marcus Gunn's Post Graduate Lecture, in the Practitioner, December, 1899.)

## FURUNCULOSIS OF EXTERNAL AUDITORY MEATUS.

(By M.M. Delsaux and Buys, *Ann. des mal d. l'or.*, July, 1899.) With regard to treatment, it is essential to commence with the removal of all oily secretion with alcohol, ether, and hot water douches. The boil may be aborted by early incision with the galvano-cautery. In a later stage maturation may be hastened by a spray of carbolic acid (1 per cent.) or a poultice containing perchloride of mercury ($\frac{1}{1000}$). If the pain is excessive, an incision should be made either after subcutaneous injection of cocaine or under an ethyl-chloride spray. The prolonged application of cocaine in association with carbolic acid may give sufficient anæsthesia for this purpose. Incision becomes imperative if a number of furuncles are present and a condition of phlegmon is induced, otherwise suppuration may occur in the pre-auricular lymphatic gland, and cause extensive suppuration of the cheek. After incision has been made, very great care must be taken to keep the meatus thoroughly cleansed, otherwise dissemination is certain to take place. Alcohol or ether are necessary for this purpose, and should be applied by swabbing several times a day in conjunction with boric syringing. Formol has proved disappointing as an antiseptic here. (From Mr. Ernest Waggett's abstract in Treatment, October 26, 1899.)

## EAR DISEASE IN CHILDREN.

Dr. Edward B. Dench said that in young children inflammation of the ear was sometimes not attended by rupture of the drum head, but by extension of the inflammation backward, and the formation of a post-auricular swelling. Such a swelling was often the first distinct evidence of inflammation of the ear in grip cases. When it was evident, by inspection, that there was an accumulation of secretion in the tympanic cavity, paracentesis should not be performed, but instead an incision should be made into the drum-head. He was accustomed to do this with a knife, keeping the point of the instrument in contact with the bone, and carrying it upward so as to not only incise the drum membrane, but also secure depletion of the membrana tympani. When the mastoid region became tender, it was well to apply the Leiter cold coil for a short time, but not more than forty-eight hours, as prolonged cold often deluded the physician and patient into the belief that further measures were not demanded. The evacuation of a post-auricular abscess through an incision into the soft parts was not sufficient; even it young children the bony structure of the mastoid should be opened. Free drainage from the middle ear should always be established. It was always advisable in children to extend the incision downward considerably, and expose the tympanic ring, for otherwise there was great danger of entering the middle cranial fossa. (Pediatrics, August 15, 1899.)

## GLAUCOMA.—Results in the Treatment of.

Zidler-Huguenin deduces the following from the private practice of Professor Haab, of Zurich. He divides the cases into three categories: (1) Inflammatory glaucoma (acute and chronic); (2) non-inflammatory glaucoma (glaucoma simplex); (3) hemorrhagic glaucoma. In more than half of the cases of acute inflammatory glaucoma iridectomy was followed by complete cure, and the cases not cured were invariably benefited. A cure was obtained in 62·5 per cent. of acute cases and in 60 per cent. of the chronic cases. In only three cases was iridectomy followed by malignant glaucoma, once after acute glaucoma and twice after glaucoma simplex. After the operation for acute and chronic glaucoma useful vision was obtained in 91·47 per cent. of the cases. As regards glaucoma simplex, in 78·41 per cent. of the cases after iridectomy and in 60 per cent. of the cases after sclerotomy the vision was either improved or remained the same. He advises myotics with the sclerotomy. For hemorrhagic glaucoma he advises sclerotomy and claims cure in 20 per cent. and no falling off in 40 per cent. of the cases. He explains his good results by the fact that the cases reported were seen in private practice. (Boston Medical and Surgical Journal, October 26, 1899.)

## INFLUENZA AND EYE AFFECTIONS.

(From Dr. H. S. Oppenheimer's paper.) All nerves sending branches to the eye are at times affected. Paralysis of accommodation has been seen by Andrews, Pooley, Webster, and Weeks. Uhthoff gives a case of paralysis of accommodation, with progressive ophthalmoplegia externa and symptoms of bulbar paralysis. Badal saw a man, aged 33 years, without rheumatism or lues, develop, during convalescence from a severe attack of grippe, diplopia due to paresis of all the muscles supplied by the third nerve, excepting the superior rectus, sphincter iridis, and muscle of accommodation. A second patient of his, a man aged 57 years, had paralysis of right external rectus. Recovery was rapid. I have reported paresis of the inferior rectus. Van der Bergh reports paresis of rectus superior and two of the abducens. Stoewer, one of the levator and rectus superior. Gayet, one of double ophthalmoplegia externa, without the levator palpebræ being affected. Gutman, one of one-sided ophthalmoplegia externa. Grieff, one case of paralysis of the left sympathetic, with enlargement of the thyreoid, prominent globes, heart's action rapid and irregular, in which ptosis of the right eye developed. Chase noticed gradually increasing prominence of eyes in a woman, aged 28 years, after grippe. Her health appeared good. The exophthalmus lasted for two years. The ciliary muscle seems to be the most frequent of the eye muscles affected. Its paresis is usually bilateral. It may exist without mydriasis, and together with difficulty of speech and swallowing. Such cases closely resemble the effects of diphtheria, and, like these, they usually disappear entirely. Next in frequency comes paralysis of the sixth, then of the fourth. Individual muscles may be partially or completely paralysed. There may be external or internal ophthalmoplegia on one or both sides. (New York Medical Journal, August 12, 1899.)

## IRITIS, SEQUELÆ OF.

The sequelæ of iritis, when the treatment has been omitted, or begun too late, are: (1) Formation of posterior synechiæ binding down the margin of the iris, so that the mobility of the pupil is interfered with; (2) occulsion of the pupil, or filling in of the pupillary space with membrane formed from the inflammatory exudates, causing permanent dimness of vision, but, if uncomplicated, no future dangers; (3) exclusion of the pupil, with iris bombé, not necessarily causing dimness of vision, if the pupillary area be free, but interfering with the escape of fluids into the canal of Schlemm, giving rise to excess of tension, and destructive glaucoma is always to be feared as a further complication; (4) total posterior synechiæ, when cyclitis is also present, followed by disorganisation of the globe. (From Dr. Clements D. G. Hailes' paper in the Edinburgh Medical Journal, 1899, p. 332).

## OTOLOGY.—Progress of.

(From Dr. Urban Pritchard's address at the Otological Congress, 1899.) In chronic middle-ear catarrh and in sclerosis—those diseases which hitherto have baffled our most strenuous efforts—a distinct advance has been made indirectly, especially in prophylaxis, by treatment of the nose and naso-pharynx. In suppurative disease there has been very great improvement in treatment. By means of boric acid, alcohol, and other suitable antiseptics simple otorrhœa has become much more manageable, and a far larger proportion of such cases are now healed even without operation. In the case of its complications—caries, granulations, and polypi—the advance made is most striking, and in consequence the large protruding polypus is now rarely seen. Curetting of carious spots and the removal of ossicles, so important in the treatment of many cases, has only recently been introduced. Then there are the wonderful strides made in the treatment of antrum and mastoid disease. (The Lancet, August 19, 1899.)

## OZÆNA TREATED WITH CITRIC ACID.

Hamm (*Munch. Med. Woch.*, April 11, 1899) recommends the application of citric acid in ozæna, as the best means of taking away the terrible odour, which not only disgusts all with whom the patient comes in contact, but also often destroys the appetite of the afflicted individual. Hence, the mere removal of the odour is often followed by a marked improvement in the patient's general condition. The citric acid, however, has also a slight beneficial effect upon the nasal lesions. It can be used either pure, or better mixed in equal parts with sugar of milk. The nose is thoroughly cleansed in the morning, and the powder is then blown into it, and the insufflation is repeated at noon and at night. The deodorising effects continue some days after the discontinuance of the powder, and as the citric acid has no harmful action, it may be used as often as is necessary. (Medical News, July 22, 1899.)

## PERONIN, A NEW LOCAL ANÆSTHETIC FOR THE EYE.

Quaita (*Settimana Med.*, October 7, 1899) has tried the effect of 5 per cent. solution of peronin (chlorhydrate of benzolic ether of morphine) as a local anæsthetic in the eyes of thirty healthy adults. At first it causes a pretty severe burning sensation, which, however, soon passes off, and is followed in three or four minutes by well-marked anæsthesia, lasting for nine or ten minutes. Peronin has no action on the diameter or mobility of the pupil, nor on the accommodation, visual acuity, or eye tension. The corneal epithelium was never affected nor infiltrated, as may happen after cocaine. The great disadvantage of peronin as an ophthalmic anæsthetic is that it causes rather intense vascular injection with lachrymatous and serous chemosis. The author suggests that it may be more useful than cocaine in enucleation or evisceration of the globe, as it produces a deeper anæsthesia, and the increased vascularity does not matter in this case. (Epitome, British Medical Journal, October 28, 1899.)

## OBSTETRICS AND GYNÆCOLOGY.

### APPENDAGES, CONSERVATISM IN OPERATIONS UPON THE.

I operate less frequently than I did for inflammatory diseases of the appendages, for I am more persistent in insisting on rest; unfortunately in many cases one is compelled in the end to operate in order to render the patient capable of doing her necessary work. In spite of the severity of the symptoms of the artificial menopause I have been struck by the almost universal restoration to health in these cases. With this return of health comes a corresponding capacity for work. Unfortunately, coincident with this is inability of the woman any longer to bear children. In view of this we have already begun to be more conservative in our operations, preserving whenever possible the appendages of one side, or if not the entire appendages then sufficient to give the woman a chance of becoming pregnant. (From Mr. Furneaux Jordan's paper in the Medical Press and Circular, November 1, 1899.)

### APPENDICITIS DURING PREGNANCY.

Gerster (*Phila. Med. Journ.*, March, 1899) says that diagnosis is more difficult in the pregnant than in the non-pregnant, but there are several points which help in it. One is that bimanual examination will usually locate the inflammation out of the pelvis; and another is the high site of the pain. However, it must not be forgotten that a long appendix may lie very nearly in contact with the uterine appendages, and especially so in pregnancy. In both early and late stages of pregnancy, the appendix should be removed as soon as the symptoms are progressive. A high pulse, vomiting or nausea, the characteristic local pain, spontaneous and on pressure, in the right iliac fossa, a tumour not involving the parametrium—all indicate prompt action. The free or slightly-adherent appendix can be easily found, freed and brought out through a comparatively small incision. Pregnancy will not be interrupted, the integrity of the abdominal wall can be restored by suture. Near the completion of term more retention-sutures should be used, as labour may begin before the wound is firmly united. Button-sutures are applied at intervals of about one-half to three-quarters of an inch. If the peritoneum is more or less generally infected, the treatment in the early stages of pregnancy is not materially modified; in the later the problem is very formidable; a low-reaching incision is necessary. (From abstract in Treatment, July 22, 1899.)

## CARCINOMA, DEODORISATION OF DISCHARGE IN INOPERABLE.

The mere frequent syringing with warm water, occasionally relied on, is, *per se*, almost useless for the purpose, whilst some of the deodorants, such as iodoform and ichthyol suppositories, sometimes prescribed, are only less offensive in their own odour than the discharge, the fœtidity of which they are designed to mask. Nor is the desired object sufficiently effected by the ordinary antiseptic solutions of izal, carbolic or boric acid, &c. Of such agents one of the most effective that I have employed is peroxide of hydrogen—which, even for some hours after its use, leaves the patient free from this horrible addition to her miseries. Cheaper as well as the best of all deodorants are, firstly, chlorate of sodium in the proportion of a couple of drachms to a quart of hot water ; or secondly, a one per cent. solution of formalin ; and thirdly, turpentine. The latter can be thus employed by putting half an ounce of pure turpentine with a spoonful of magnesia into a quart of boiling water, and then pumping the mixture with the syringe from one vessel into another until the temperature will be reduced to blood heat. No deodorant or styptic application in general use appears to afford more distinct respite from the fœtor as well as hemorrhage of cancerous uterine discharge than this. In some cases, however, similar effects can advantageously be produced by applying a small tampon saturated in a mixture of pure terebene and glycerine to the cancerous surface, where it may be left *in situ* for several hours. (From Dr. More Madden's paper in the Dublin Medical Journal, June, 1899.)

## CHLOROFORM DURING LABOUR.

Bacon writes a paper in the *North Western Lancet* of March 15, 1899. When valvular lesions of the heart are present, the increase in the volume of blood, and the increased engorgement of the vessels that occur during the uterine contractions become a source of danger. Without chloroform the heart's action becomes laboured and irregular, and the patient's distress is great, but immediately upon its exhibition the vasomotor dilatation allows the patient to bleed into her venous system, and the vigour of the uterine contractions is lessened. The excess of work thrown upon the heart is removed, and the relief to the patient is so evident that Bacon would as soon think of approaching one of these cases without aseptic precautions as without chloroform. When disease of the blood-vessels is present, chloroform should be administered to relieve straining and lessen the danger of rupture. (Therapeutic Gazette, July, 1899.)

## CHORION, HYDATIDIFORM DEGENERATION OF

An inquiry was made into the presence or absence of the usual signs and symptoms of normal pregnancy under the following heads: (1) amenorrhœa; (2) vomiting; (3) activity of the breasts; (4) blue colouration of the vaginal mucous membrane; (5) softening of the cervix; (6) uterine tumour; and (7) uterine tumour and fœtal heart-sounds. The conclusion was that all these symptoms and signs were usually present excepting the uterine souffle and fœtal heart-sounds, but sometimes these might be heard; whilst, on the other hand, the only sign which was constantly present was enlargement of the uterus. The distinguishing features of the condition were then described under the following heads: (1) The size and other physical characters of the uterus. Two classes of cases were shown to exist: (*a*) those in which the uterus was larger than would be expected from the probable duration of the pregnancy; and (*b*) those in which the uterus was smaller. Another feature sometimes present, and of importance, was uterine tenderness. (2) Vaginal discharges, with or without the cysts. (3) Hemorrhage. The author then discussed the diagnosis, the conditions likely to be mistaken for hydatidiform mole being—(1) concealed accidental hemorrhage and placenta prævia; (2) the discharge of a pelvic hydatid through the vagina; and (3) hydramnion, especially if combined with hydrorrhœa gravidarum. Cases in which difficulty had arisen were recorded. The complications met with were described. (1) Albuminuria, a frequent complication. Two forms were to be distinguished: (*a*) one form in which the prognosis was good, in which blood and epithelial casts were not present in the urine; and (*b*) one form in which the prognosis was bad and in which these structures were found in the urine. (2) Hemorrhage, seldom fatal in itself. (3) Sepsis; sapræmia, septicæmia, and pyæmia were all frequent complications. With regard to prognosis, the mortality of the whole 25 cases was 20 per cent. The mortality of the 10 consecutive cases from St. Bartholomew's Hospital was 30 per cent. (From report of paper read by Dr. Herbert Williamson before the Obstetrical Society of London, Lancet, October 14, 1899.)

## DOUCHE, THE.

F. A. Stahl (*Journal of the American Medical Association*, September 30, 1899) says that the douche is a benefit, and to be recommended both as a prophylactic and as a preventive measure. It cleans, it stimulates; to the genital economy it is bactericidal, for though it may not destroy, it washes away multitudes of micro-organisms; the patient feels refreshed and strengthened after it; it is a splendid antipyretic. Less injury has been done by the douche than by the non-douche principle. Further, ophthalmia neonatorum is surely discouraged by the douche. Repetition, temperature, force, and quantity of the douche must be regulated by the demands of the problem. Perforating wounds of the cheek and lip, continually bathed in the secretions of the mouth, and mammary abscesses—these, like the wounds of labour, will heal and will recover; but neither so pleasantly, so perfectly, so promptly, nor with so little systemic reaction as when the douche is intelligently applied. Its beneficial efficacy in the early labour, the abortion, is a fact. Contrary argument would prove but a boomerang. The dangers of the douche have been exaggerated. The extreme danger of possible air emboli in practice bears the same relation to its reported theoretical possibility as is so correctly suggested in the figure of exaggeration, viz, as the mole-hill to the mountain. (Medical Age, October 28, 1899.)

## FORCEPS.

The percentage application of forceps in the Extern Maternity was 1·67 per cent., and in the Intern 3·97 per cent. This great difference is most probably due to the fact that the proportion of primiparæ to multiparæ is far greater in the Intern Maternity than in the Extern. In one case the forceps were applied to the second of twins, as the head remained in the brim for five hours, and the child commenced to show signs of distress. Delivery was easy and the child alive. In another case the patient had an epileptiform seizure as she came into the second stage. She passed no urine during the day, and the bladder was empty; an hour later she had another seizure, when it was considered necessary to apply the forceps. After delivery she was given half a drachm of bromide of potassium and 15 grains of chloral hydrate, after which she slept for nineteen hours. On awakening the catheter was passed, and 36 ounces of pale urine of low specific gravity, and containing no albumen, were drawn off; a few hours later 19 ounces were drawn off. Convalescence was normal. One patient—a 6-para, aged twenty-eight—was admitted in a very excited state. She was considerably under the influence of alcohol, and during the pains, which were frequent, she strained violently. On examination the os was found fully dilated, head barely engaged in the brim and her pulse 120; the fœtal heart was irregular. She had a history of forceps on all her previous confinements. Forceps were applied, and the child, weighing 6¼ lbs., delivered alive with some difficulty. The pulse remained rapid and feeble for three hours after delivery, and as she continued restless and excitable, she was given $\frac{1}{4}$ gr. of morphia hypodermically. She became maniacal soon after delivery, but it passed off on the ninth day, and she was discharged well on the eleventh. The temperature fluctuated between 99° F. and 100° F., and on one occasion reached 101° F. (From Drs. Lyle and Lloyd's Reports of the Rotunda Hospital, Dublin, Dublin Journal of Medical Science, 1899, p. 336.)

## GONORRHŒA IN THE FEMALE.

The most effective antigonorrhœal remedies so far known are ichthyol and the silver preparations. Ichthyol has a beneficial action, especially in cases of acute gonorrhœa in the female, and in my clinics every case of acute vaginitis and vulvitis easily yields to a few applications of tampons dipped in a preparation of ichthyol and glycerine, equal parts. In the subacute and chronic cases, however, the silver preparations are much more desirable. Nitrate of silver in substance, in a thin, flexible rod, so much used in past years to cauterise the cervical canal, has been nearly discarded in ordinary cases. I reserve this cauterisation for cases in which granulations are to be destroyed. In the same way I use strong solutions of the same salt only when the cervix shows excoriations with granulations. Protargol I have found so far to be the best antigonorrhœal remedy, and since the time I introduced it in my clinic I have many times spared the patient a curettement of the uterus. (From Dr. A. Ravogli's paper in the Medical News, November 18, 1899.)

## GYNÆCOLOGICAL OPERATIONS AND MENTAL DISEASE.

Statistical researches have been instituted in England and America concerning the occurrence of psycho-gynæcological operations, with the following results:—Savage found, after 500 abdominal sections, four cases of mental derangement. Kinkley only one in 596. Investigation by Roke (*New York Medical Journal*, October 14, 1893) showed the more important fact that in all the lunatic asylums of the United States and the English colonies, in the course of ten years, only 25 patients were registered who had become insane after a gynæcological operation. To Czempin Ebell's observation that perineo-plastic operations are liable to bring about psychoses, I can but add the result of my own experience, which shows in 85 perinæorrhaphies only one case with this complication. This occurred where curettage had been previously practised, necessitating the use of anæsthetics twice in four weeks' time. As for the rest, in rather a large number of benign and also more serious operations, I have never observed the appearance of psychical troubles. On the other hand, recovery from neurasthenia has often resulted from gynæcological interference. (From Dr. Mendes de Leon's address to the British Gynæcological Society, British Gynæcological Journal, August, 1899.)

## HYSTERECTOMY, TOTAL ABDOMINAL, FOR UTERINE CANCER.

(By M.M. Picque and Manclaire, *Ann de Gynæcologie*, May and June, 1899). All operators agree that total abdominal hysterectomy, with complete removal of the glands, will give the best results in cases of cancer of the cervix or body. By the vaginal route the dissection is tedious, dangerous, and often impossible. In cancer of the body the vaginal operation if done early, has given good results. The volume of the uterus, its mobility, and the size of the vagina must be considered. If the uterus is large, somewhat fixed, and the vagina narrow, abdominal hysterectomy should be preferred, as also if the cervix is very friable, or there is any evidence of peritoneal adhesions. The age of the patient does not seem very material. Elderly women bear abdominal hysterectomy very well, at any rate up to the age of 55 years. If after abdominal exploration the uterus is found adherent to the rectum or bladder, or the broad ligaments are infiltrated with cancerous nodules, operation should be abandoned. The existence of a pyosalpinx renders the patient very liable to have septicæmia. (From Dr. A. W. W. Lea's abstract in the Medical Chronicle, September, 1899.)

## HYSTERECTOMY, VAGINAL, FOR UTERINE FIBROIDS.

Bushbeck (*Archiv für Gynäkologie*, Band lvi. Heft 1) reports the following remote results in one hundred cases: The mortality was 3 per cent., ligatures being used exclusively. Sixty-five patients who were examined from one to ten years after operation were entirely cured and able to perform their usual duties, being physically and mentally sound. The writer believes that it is of the greatest importance to make a careful examination of the entire circulatory system in every case of fibromyoma before operating. By the systematic use of subcutaneous injections of saline solution patients who have been greatly reduced from loss of blood can in a short time be enabled to stand even severe operations. (American Journal of Medical Science, 1899, p. 235.)

## INERTIA.—Treatment of.

Dr. Charles Stover, Amsterdam, N.Y., presented a paper on this subject to the American Association of Obstetricians and Gynæcologists. In the treatment of inertia during the first stage of labour, ergot is to be condemned, and rest secured by sleep. In the second stage, instrumental delivery will usually be indicated, but the slowly interrupted faradic electric current is useful, selecting the primary current when the secondary may be painful. Strychnia is to be given in doses of $\frac{1}{20}$ or $\frac{1}{40}$ gr., repeated in two hours, if necessary. Ergot is not advised, save in exceptional cases, and then in doses of 5 minims, every fifteen or thirty minutes. In the third stage, when post-partum hemorrhage may have complicated the situation, after coagula have been emptied out and secundines removed beyond doubt, the faradic current is of great value. It may be applied with one pole over the abdomen, and one at the lumbar spine. This is usually sufficient, but the intra-uterine bipolar application may accentuate its efficiency. The telescopic electrode invites sepsis. Ergot should be given hypodermically. Manual compression and massage should not cease for an instant. (Journal of the American Medical Association, October 21, 1899.)

## LACTATION BY ALBUMINURIC MOTHERS.

Budin and Chavane (*Rev. Obstét. Internat.*, June 11, 1899) conclude, from the statistics of the Charité, the Maternité, and the Clinique Tarnier, that women who have had albuminuria in pregnancy may nevertheless nurse their infants, and that even when they have been eclamptic Often the albuminuria has rapidly disappeared, and nursing has gone on uninterruptedly. When the albuminuria persists—which is exceptional—lactation may still be continued, and the ultimate recovery of the mother is not thereby hindered. When the mother has not enough milk, she may have recourse to a mixed diet. Of course strict supervision is always needed. (Epitome, British Medical Journal, August 12, 1899.)

## MENOPAUSE AND HEMORRHAGE.

Dr. John Milton Duff, of Pittsburg, did not believe that hemorrhage was a necessary concomitant of the menopause. When it did occur other than as a metrorrhagia in the true sense of that term, it was in 99 per cent. of the cases significant of a pathological condition. During the past three years he had interrogated, or had had others do it for him, four hundred and eighty-two healthy women over 52 years of age. Of these only thirty-nine gave a history of what could be termed a hemorrhage during the menopause, and of this number only five gave a history of persistent hemorrhage. In one hundred and eighty-seven tabulated cases, between 43 and 50 years of age, suffering from uterine hemorrhage, nineteen were due to pregnancy, forty-eight to malignant disease, fifty-three to fibroids or uterine cysts, ten to diseased endometria, twenty-six to diseased appendages, while in thirty-one no positive diagnosis was made. In view of such statistics the author failed to see how any physician could argue, as he had heard them do, that hemorrhage during the menopause was not as a rule significant of disease. Finally, "all persistent hemorrhages during the menopause should be regarded with suspicion." (Medical Record, October 7, 1899.)

## MENOPAUSE: NATURAL AND ARTIFICIAL.

Dr. Charles A. L. Reade (Cincinnati) said (in the discussion before the British Medical Association, 1899), that he had long been impressed with the fact that the menopause could not be recognised as a physiolgical or pathological entity with uniform characters. On the contrary, he was convinced that it was one of the phenomena of sexual life which never squared itself to regular rules of conduct. The acute menopause produced by complete ablation of the uterine appendages was usually so stormy that he had sought to mitigate its severity by conservative measures, such as leaving part or the whole of an ovary. He was compelled to admit, however, that frequently second operations had to be subsequently performed for the removal of the ovary left behind. He had therefore drifted back to the position of the late Mr. Lawson Tait who favoured the practice of bilateral ablation of these organs. He regretted that Mr. Bland Sutton had not considered the effect of the vaso-motor disturbances of the artificial menopause upon the hæmatogenic functions. He had himself conducted a series of observations upon this point, but the facts ascertained were too meagre to justify conclusions. He was, however, convinced that there occurred a definite leucocytosis and a constant oligochromæmia, reducing the percentage of hæmoglobin sometimes to 70. (Lancet, August 19, 1899.)

## MORTALITY, DIMINISHED OPERATIVE.

Hartmann attributed, at the International Gynæcological Congress, 1899, the great fall in the operative mortality during the last few years to the introduction of asepsis in place of antisepsis. Antiseptics are only to be used for the skin of the hands and the patient. The recent advances in technique which have been of the greatest value are:—(1) Exact limitation of the operative field. This is attained by the Trendelenburg position and the use of sterilised compresses to isolate the operator's area from the remainder of the abdominal cavity, thus preventing accidental inoculation of the peritoneum. (2) Suppression of large pedicles and ligatures *en masse.* These expose to hemorrhage from slipping, adhesions of coils of bowel and painful nodules in the stumps. Each vessel should, as far as possible, be clearly isolated and ligatured. (3) Suppression of all bleeding surfaces. This is of especial importance. Ligatures should, if possible, be covered over, and the pelvic peritoneum sutured with care, at the conclusion of the operation. (4) Hartmann frequently used drainage but removes the tube or gauze very early. Finally, in prolonged operations the injection of several pints of chloride of sodium solution under the skin is of great value.—Cumston (Boston) holds that asepsis alone, cannot give the best results unless it is combined with antisepsis. He proceeds to describe the special methods of disinfection of the hands and skin used by him. He has tried various kinds of gloves for operative work, but has abandoned them. He advises, however, the use of gloves for all vaginal examination of patients, and especially for septic cases with the object of avoiding contamination of the hands by infectious material, which cannot be got rid of even by prolonged washing. With regard to the preparation of the patient in addition to the ordinary methods of disinfection of the skin, he attempts to disinfect the bowel by doses of B-naphthol. If there is evidence of decomposing urine he gives urotropine for some days before operation. He records 74 gynæcological operations during the last year, in none of which any accident occurred, which could be attributed to defects in the technique of antisepsis. Doyen gives an account of the methods he uses. Rigorous antisepsis is essential and is not easy to attain. Even if the technique is perfect the vital resistance of the patient remains as an important factor, and at present this is very difficult to estimate in any given case. (Medical Chronicle, November, 1899.)

## PELVIC DEFORMITY.—Treatment of Labour in.

Dr. George W. Dobbin (*Obstetrics,* August), from a critical review of the first thousand patients delivered in the obstetrical department of the Johns Hopkins Hospital, concludes that: (1) In 131 cases of contracted pelves there was necessity for operative delivery 46 times, or 35·11 per cent. (2) The pelves most frequently requiring operation are the rhachitic and irregular forms. The generally contracted pelvis, though very common in the negro race, is comparatively rarely sufficiently deformed to seriously obstruct labour. (3) Pelves in which the degree of contraction is slight, and those in which the contraction is very marked, are the easiest for treatment, as in both cases the indications are definite, and should give the operator little trouble in deciding upon the treatment to be pursued. (4) On the other hand, the pelves possessing a medium degree of contraction are the most perplexing, and call for the exercise of the greater skill and judgment. When proper appliances are at hand, such cases are best treated by tentative application of forceps, and this failing, immediate Cæsarean section. (5) In general, forceps give a lower fœtal mortality than version, but version done as a primary operation on a movable head in a slightly contracted pelvis is a safer operation for the child than a difficult high forceps operation. (6) Except in very exceptional cases, symphyseotomy is not to be compared with Cæsarean section, for the former operation, besides causing greater injury to the mother, is always an uncertain procedure. (7) Operations on contracted pelves are rarely uncomplicated. Among the commonest accidents may be mentioned premature rupture of the membranes and prolapse of the umbilical cord. (8) The only rational and scientific method of obtaining "corrected morbidity" statistics is by the bacteriological examination of the uterine lochia, for only in this way can we say definitely which infections are the result of operation. (New York Medical Journal, September 9, 1899.)

## POSITION OF FACE.—PERSISTENT MENTO-POSTERIOR.

Dr. Lewers read a paper before the Obstetrical Society of London on a case of persistent mento-posterior position of the face in which the child was delivered alive by the axis-traction forceps. In the case recorded the patient was a primipara, and the face presented with the chin directed backwards and to the right. The os had been fully dilated, and the membranes ruptured for some time, but progress was completely arrested with the face well down in the pelvis. The ordinary forceps was applied, but slipped as soon as traction was made. On traction being made with the axis-traction forceps the head came lower and the chin rotated forwards, the chin being delivered in a very few minutes. The perineum was slightly torn, and the child suffered for some weeks from facial paralysis, which ultimately disappeared completely. The author mentioned another case similar in essential points to the above, published in the *Clinical Journal* for 1892-93. He alluded to the liability of the ordinary forceps to slip in these cases. With the axis-traction forceps the position of the blades could be maintained by fixing the screw, and the position of the child was then little likely to be affected by the subsequent tractions which, by drawing the head lower, favoured rotation forwards of the chin. (British Medical Journal, July 15, 1899.)

## POSITIONS, ANTERO-POSTERIOR, OF THE HEAD IN LABOUR.

(From Dr. R. G. McKerron's paper). The effect on labour when the head occupies an antero-posterior position is similar to that in contracted pelvis generally, and is well illustrated in the two cases. The head, prematurely arrested, fails to accommodate itself to the brim and to the lower uterine segment, so that dilatation is slow. If dilatation is not complete when the membranes rupture, its further progress is apt to be arrested by the nipping of the cervix at the brim. On examination the cervix may be felt to hang more or less loose during the pains. At first the uterine contractions are frequent and strong, but if the head fails to become moulded or to rotate, they gradually get weaker and the symptoms of obstructed labour sooner or later develop. Seeing, then, that the natural efforts will, in the majority of cases, end in failure, it follows that assistance should be rendered early. That is the invariable rule in obstructed labour. The management of the early stage of labour conforms to that in narrow pelvis. (Transactions Obstetrical Society, 1899, vol. xli.)

## PREGNANCY IN A BICORNUATE UTERUS.

(By Dr. W. K. Walls, *Trans. of North of England Gynæcol. Society*, April, 1899.) The patient when first seen had been nineteen hours in labour. The pelvis was occupied by a large firm mass, the size of the fœtal head, and bulging towards the posterior vaginal wall, but in this no bony part could be made out. The os uteri was situated midway between the umbilicus and the pubes, the vagina being much elongated ; a hand was presenting. Under chloroform it was made out that the mass in Douglas' pouch was the right horn of a bicornuate uterus, retroflexed and containing the placenta. The left horn contained the trunk and limbs of the fœtus, whilst the head was placed centrally between the two horns. Delivery was effected by version, and the patient made an excellent recovery, although during the puerperium the left horn became retroflexed. All symptoms, however, disappeared, when this was raised up. (Dr. Arnold W. W. Lea's abstract in the Medical Chronicle, July, 1899.)

## PREGNANCY IN A UTERINE HORN.

(By Dr. C. E. Manierre, *American Gynæc. and Obstet. Jour.*, September, 1899.) In a bicornuate uterus pregnancy may occur in either horn whether rudimentary or not. Up to 1888, thirty-four cases of pregnancy in an undeveloped uterine cornua had been reported, in twenty-four of which the horn had ruptured and so caused death. The fatal result very quickly follows rupture, the case upon which Cullen and Wilkins founded their report terminating fatally within two hours of the first onset of the symptoms of rupture, thus precluding the possibility of any surgical interference, the bleeding being favoured in a typical case by the horn being free or movable. The existence of patency of the tube previous to impregnation is doubted by many. Turner is one of the strongest advocates of the theory that the horn is not always patent before conception, as in a series of bicornuate uteri examined by him all gradations were met with from an impervious cord to a large horn with a good-sized cavity. Where the horn was closed previous to pregnancy there are two ways by which this horn could become the seat of gestation. Either a spermatozoon has travelled across the pelvic cavity from one tube to the other, and there impregnated an ovary, or else an ovum from the healthy side has become impregnated and then got into the tube of the other side. The fact that a well-developed corpus luteum was found in the side opposite to that containing the pregnancy in a large proportion of cases is strongly significant. No method of making a definite diagnosis previous to rupture has yet been discovered, the rarity of the trouble rendering the framing of any rule for this purpose extremely difficult. (From Dr. F. A. L. Lockhart's abstract in the Montreal Medical Journal.)

## PREGNANCY, TUBAL.—Treatment of.

In all forms of tubal pregnancy before the end of the third month, before or after rupture, unless there is a great accumulation of blood in the abdominal cavity, the ruptured tube may be removed per vaginal incision with nearly perfect results. Of course it would not be the correct thing to attempt to complete an operation for intraperitoneal rupture in extrauterine pregnancy per vaginam where the abdominal cavity is filled with blood, but vaginal incision is often of value even in these cases. It is well known that the primary hemorrhage is sometimes so extensive as to result in shock that, for the present, contraindicates cœliotomy. In these cases the custom has been to temporise until the shock may have been sufficiently combated to justify cœliotomy. But often, just as the pulse becomes well perceptible, secondary hemorrhage speedily causes death. In these cases secondary hemorrhage can be positively prevented without materially endangering the life of the woman by increased shock. If she is too feeble to bear an anæsthetic, then a vaginal incision may be made without it, the ruptured tube pulled into the vagina, clamped with a small forceps and left in the pelvis until the patient is prepared for a cœliotomy. During the last four years I have operated per vaginam many times for extrauterine pregnancy, all the patients having recovered without a complication or bad symptom. (From Dr. W. H. Wathen's paper in the Journal American Association, October 14, 1899.)

## PUERPERAL FEVER.—Treatment of.

Dr. Eberhardt, at a meeting of the Vienna Versammlung Deutscher Naturforcher (*Medical Press*, Sept. 6, 1899), reported great success with an injection of sodium chloride in cases of puerperal fever, and more particularly in those septic cases where vomiting is persistent and no fluids can be retained on the stomach, whereby the fluids of the body are reduced and poison more concentrated. From the report of many experiments Eberhardt showed that one litre of this 0·9 per cent. solution effectively produced diuresis, which promptly eliminated the bacteria with effete nitrogenous products. After this start the circulation of the kidneys became more vigorous, and averted all future danger of concentration in the kidneys. He was supported in this favourable report by Sahli, who could vouch for the beneficial effects of the solution. Eberhardt strongly recommended the treatment to practitioners, by whom it could be easily applied without any danger to the patient, which is also a serious consideration in these days of highly forced æsthetics. (Medical Age, October 10, 1899.)

## PUERPERAL INFECTION TREATED BY SALINE TRANSFUSIONS.

Ostermayer in the *Centralblatt für Gynäkologie*, March 12, 1899, reports a most interesting case of infection following abortion at two months. After evacuation of its contents, the uterus was immediately cleansed and packed with iodoform gauze. In spite of this treatment the infection, apparently present before the operation, progressed with the symptoms of severe pyrexia, jaundice, and gastro-intestinal irritation. There were hardly any symptoms localised to the pelvis, some slight parametric thickening being noted. An abscess developed under the jaw, which was opened; there was a general erythematous rash on the body. The vomiting and diarrhœa continued, and at last, with the pulse rising to 140, the patient seemed to be becoming moribund. Then it was decided to inject sterilised saline solution into the cellular tissue. Twenty ounces were used at the first injection, and some improvement of the symptoms followed at once. The injections were continued twice daily for six days. Diuresis and a fall in the pulse-rate were marked throughout, the intestinal irritation stopped, and the temperature became normal. The patient made a perfect recovery. (Abstract in Treatment, August 24, 1899.)

## Puerperal Infection.—Treatment of.

The conclusions which the study of these cases appear to justify, are shortly as follows:—(1) A rise of temperature over 101·4° during the puerperium, not obviously accounted for by other causes, should lead to a thorough examination of the genital passages. (2) If no sufficient explanation is found in the condition of the perineum or vagina, a uterine douche should be at once given, with due precautions. (3) If within 24 hours the temperature has fallen definitely, no further exploration is required, but the douche may be repeated if the temperature again rises. (4) If at the end of 24 hours the temperature is higher, and the pulse rate has increased, the cavity of the uterus should be explored with the sterilised finger. (5) If the initial rise of temperature is great (103° or over), with or without a rigor, the uterus should be explored at once, not waiting 24 hours to observe the effect of a douche. This is more especially indicated if the uterus is bulky, showing delayed involution, since this points to putrefaction of retained products, or to septic endometritis. (6) If clots or placenta are discovered, they should be removed by the finger or curette, a douche given, and a gauze drain inserted for 24 hours. (7) In the great majority of cases, it is wiser to thoroughly curette the uterus with the object of removing the whole of the decidua and retained products. (8) There is no evidence that curettage, if done with every precaution, favours the spread of infection. In a large proportion of cases the infection is rapidly checked. (9) In very virulent infection *early* curetting with the object of sterilising the uterine cavity, affords the best chance of a successful result. (10) If curettage entirely fails, it must be repeated or not according to the local condition present. The prognosis, however, in the absence of a definite localisation of the infective process, is bad. (11) In some cases if curettage fails, and there is no evidence of general peritonitis or of infection of the blood stream, vaginal hysterectomy, if performed in good time, may be successful. (12) Antistreptococcic serum should be given early and freely in cases of *proved* streptococcic infection. It is of little use in the advanced stages of the disease. (From Dr. A. W. W. Lea's paper in the Medical Chronicle, August, 1899.)

## RADIOGRAPHY OF THE PREGNANT UTERUS.

Numerous attempts have been made to secure an outline of the fœtus in utero by the Roentgen rays. Some years ago the reporter succeeded in obtaining a tracing of the cranium and skeleton of a living child in the womb of its mother in the ninth month of pregnancy. A clear outline, however, was difficult at that time to obtain. In the *Annales de Gynécologie*, April, 1899, Varnier calls attention to his report, made at the Congress in Moscow, and to further experiments upon the cadaver which he has carried on with the Roentgen rays. Dim outlines were obtained upon the living pregnant patient, but no clear picture. Recently by lengthening the time of exposure Varnier was able to secure an outline of the contour of the fœtal head, and also to determine whether or not it had entered the pelvis, and to obtain an idea of its volume, of its position, and of the degree of flexion and engagement. When these pictures were made with the mother in the dorsal position no tracing was obtained of the vertebral column of the mother nor of the fœtal limbs. This at present seems to be the extent to which this method of diagnosis is applicable in the study of obstetrics. (Abstract in the American Journal of Medical Science, October, 1899.)

## SALIPYRIN IN GYNÆCOLOGY.

Dr. Beuttner, of Geneva, reports a series of 24 cases. His conclusions are that salipyrin may be used with success in: (1) menorrhagia, with or without lesions of the adnexa; (2) metrorrhagia, with or without lesions of the adnexa, except in case of cancer and other tumours, and of labour or abortion; (3) hemorrhage arising from the menopause; (4) hemorrhages coming on some time after labour or abortion; (5) in threatened abortion; (6) dysmenorrhœa; (7) in uterine derangements of the nature of periodical neuralgic symytoms; (8) in menstrual pain in the absence of serious uterine lesions; (9) in conditions of psychical depression before or during menstruation. (Medical Record, September 16, 1899.)

## SALPINGITIS, GONORRHŒAL.

Mr. J. W. Taylor thus concludes his article: (1) That a large number of women who are suffering from tubal disease have been at some time or another exposed to the infection of syphilis as well as of gonorrhœa. That these undoubtedly show marked improvement after a prolonged course of mercury and iodides, and in the course of this treatment, unless acute pyo-salpinx intervenes (in which medicine is useless), it is the rule rather than the exception for all gross physical signs of disease to slowly and permanently disappear. (2) That many cases in which there is no history of syphilis, including cases in which there is the unmistakeable history of gonorrhœa, pure and simple, as the sole cause and starting-point of tubal disease, do similarly improve and get permanently well under the same course of treatment, provided always that the disease stops short of acute pyo-salpinx and its dangerous complications. (3) That acute pyo-salpinx is peculiarly liable to occur in the first place on the left side of the body, and its special severity is probably due to secondary infection from the rectum. That cases of pyo-salpinx, whenever possible, should be treated by free incision of the posterior vaginal fornix, by thorough exploration and emptying of all pus-cavities from the pouch of Douglas, and by iodoform gauze drainage. That this is far preferable to the older operation of removal of the appendages, which is not only much more dangerous, but is peculiarly liable to be followed by fæcal fistula, an operation sequel sometimes worse than death itself. (4) That such cases of mixed infection and acute suppuration treated by operative evacuation of the pus, with or without removal of the appendages, do sometimes not only recover, but remain permanently well without further treatment, the acuteness of the inflammation appearing to terminate the process of infection. In other cases, recovery is not so complete or relapses are met with, and these cases should be followed up by a course of specific treatment, the beneficial result of this being often immediately manifest when the wound tissues are unhealthy and the healing is delayed. (5) That occlusion of the tubes and peritubal adhesions consequent on gonorrhœal adhesions have no direct specific causation, and must be regarded rather as secondary mechanical results of the local peritonitis which has been caused by salpingitis. (6) That in gonorrhœa of the pelvis there will probably remain a residuum of intractable cases, particularly cases of complication with other diseases, such as fibroids of the uterus. That in these cases operative removal of the organs affected will still be required, and that vaginal hysterectomy whenever possible, with or without extirpation of the uterine appendages, is not only the most rational operation in theory, but is productive of the best final results. (British Gynæcological Journal, August, 1899.)

## SCRAPINGS, UTERINE.

In studying the sections prepared from scrapings. and in recording the results a systematic scheme should be followed. The one suggested by Hunter Robb in a recent elaborate and valuable paper on this subject, seems to be very advantageous. Robb directs attention to the following points: (1) The superficial epithelium—*i.e.*, the layer of epithelium lining the cavity of the uterus. (*a*) Is surface smooth or not? (*b*) Character of cells. (*c*) Single layer or multiple layers? (2) Utricular glands: Course—straight, waving, or corkscrew. Length. Size. Lumina. Shape. Glandular epithelium: Character of cells. Single layer or multiple layers. (3) Stroma: Size of cells. Physical characteristics. Different sorts of cells: Lymphoid, oval or round, fusiform or spindle. Peculiarities in arrangement of cells. (4) Vessels: Those near the surface and those more deeply situated. (5) Muscular tissue: If present or not, and if any peculiarities noted. (6) Histological diagnosis. (7) Notes or remarks. These histological findings should be made to supplement a carefully taken clinical history in each case. (From Dr. W. E. Swan's paper in the New York Medical Journal, October 14, 1899.)

## SOUND, ACCIDENTS DUE TO THE UTERINE.

The precautions most needed to prevent accidents are (1) asepsis; (2) careful estimation of the size and position of the uterus before commencing; (3) the gentleness born of a knowledge of the condition that may occasionally be present; (4) avoidance of powerful ovum forceps in abortion cases; (5) rest in bed and careful surveillance after any curetting. In case of suspected perforation, gauze packing and rest seems usually to be followed by recovery. Exposure of the uterus by vaginal or abdominal section, and suture of the rent has been followed by excellent results in very serious cases. (From Dr. J. B. Hellier's paper in the Quarterly Medical Journal, July, 1899.)

## SYMPHYSEOTOMY AND PREMATURE LABOUR.

The great question of induction *versus* symphyseotomy at full time demands notice. The lower limit of symphyseotomy, Professor Morisani told the Edinburgh meeting, is 2¾ inches in the true conjugate. Of the twenty successful inductions in our record, there are two with a true conjugate of 2¾ inches and one with 2½ inches. If this is the downward limit of symphyseotomy at full time, its field seems well covered by induction of premature labour. In the reports by M. Pinard of symphyseotomies at La Clinique Bandelogue, Paris, for the last three years that have come into my hands—viz., 1895-97—there were 41 cases operated on. The general results were—35 women lived, six died; 34 children lived, seven died. The mortality of the children, about one-fifth, is the same as Dr. Moir's for induction. That of the mothers is very much worse than ours for induction. Of course, however, for such statistics to be properly compared, details would have to be exhaustively examined. Whether symphyseotomy at full time may take the place of induction of premature labour in the future, it has been suggested, and it seems to me with considerable reason, that combined with induction of premature labour it might take the place largely of Cæsarean section, the mortality of which is still very great. (From Dr. Black's paper in the Glasgow Medical Journal, 1899, p. 97.)

## TUBERCULOSIS, SIX CASES OF UTERINE.

Of this rare affection six cases occurred in the Göttingen Frauenklinik within ten months, perhaps in connection with the frequency of tuberculosis of the bones and joints at that place, but in one instance only did the tuberculosis affect the uterus alone. The diagnosis was established four times by abrasion, twice by exploratory laparotomy, and, with the hope of cure, the uterus was extirpated once by the abdomen and once by the vagina. As regards their pathological anatomy, the following forms of the disease were made out:—In the portio, tumour formations, shallow ulcers, miliary tubercles, and bacillary catarrh; in the corpus, miliary tubercles, caseous degeneration, and shallow ulceration. Clinically, little or no discharge; the menstrual flow was seldom increased; in most cases there was amenorrhœa. It is remarkable that, in spite of caseous endometritis, pregnancy may occur and have a normal termination.—Vassmer, *Arch. r. Gynaek.*, Berlin, Bd. lviii. S. 301. (Edinburgh Medical Journal, December, 1899.)

## UMBILICAL HEMORRHAGE.

(By W. A. Verco, *Australasian Medical Gazette*, January 20, 1899.) Umbilical hemorrhage may be accidental from faulty ligation of the cord, or coming on later, *i.e.*, fifth to fifteenth day, due to some undercurrent disease in the infant, such as hæmophilia or syphilis, or a feeble coagulability of the blood, the fœtal vessels not being properly occluded; or in the mother, a low state of health during gestation, or excessive use of diluent drinks. Often associated with jaundice, may be due to destruction of red globules and liberation of hæmatin, or to abnormalities of the liver or continued patency of the ductus venosus (Quincke). It occurs after the separation of the cord. The following cases are given :—Mrs. M. : first child, jaundice after birth, alive ; second, alive ; third, jaundice, alive ; fourth, jaundice on third day, died ; fifth, jaundice on third day, died ; sixth, born jaundiced, died ; also three miscarriages. Mrs. G., first child, jaundice, hemorrhage, alive. The author considers the jaundice in the above cases to have been due to obstruction. Treatment unsatisfactory. (Abstract in Quarterly Medical Journal, July, 1899.)

## UTERUS, POSITION OF GRAVID.

In the *Glasgow Medical Journal* for July, 1899, Dr. Maclennan writes on the position of the gravid uterus at the onset of labour, as regards rotation and lateral deflexion. In his observations the position of the uterus was determined by palpation of the round ligaments, which are easily recognised during labour pains. The uterus is said to be symmetrical in position when its long axis is in the middle line of the body, and when the origins of the right and left round ligaments are equidistant from the middle line, showing that the uterus is not twisted on its long axis. Right or left flexion is present if the long axis of the uterus inclines to the right or to the left. Right rotation occurs when the uterus is twisted on its long axis toward the right, the left round ligament coming forward, the right passing backward. In left rotation the reverse, of course, occurs. He gives the presentation and position of the fœtus and other relevant details in each of the thirty-six cases, and draws the following conclusions :—(1) Right flexion with right rotation is by far the commonest deviation. No case of the converse observed. (2) Flexion is caused by purely mechanical conditions, and it will tend to produce rotation to the same side. (3) Flexion has no relationship with presention or position of the fœtus. (4) Rotation is due to laxness of the uterine ligaments, and possibly to irregular contraction, but not to an irregular arrangement of the muscular fibres. It may replace lateroflexion as an attempt at accommodation. (5) Flexion without rotation was only observed in contracted pelvis. (6) An absolutely symmetrically placed uterus is more common in primiparæ, but one medianly placed and accompanied by rotation is commoner in multiparæ. (Practitioner, December, 1899.)

## VOMITING OF PREGNANCY.

Hyperemesis gravidarum, according to Sajaitski (*Deutsch Med. Zeitung*) is not a neurosis, but a simple reflex phenomenon caused by irritation of the peritoneal coating of the uterus from enlargement of its cavity. It occurs in cases in which the lower segment of the uterus does not increase in size *pari passu* with the upper portion, where the hyper-extension is too rapid, as in the cases of hydatid mole, hydramnios, &c., or when some hindrance to mormal development is present, as from chronic metritis, interstitial or submucous myoma, &c. Increased irritability of the nervous system contributes largely to its occurrence. The treatment of hyperemesis gravidarum is as varied as its etiology. Most of the remedies employed or recommended for the disease are useless, the sole remedy lying in the appropriate local treatment of the affection of the womb that causes the vomiting. If this does not succeed nothing remains but to interrupt the pregnancy. In some desperate cases this radical measure takes place spontaneously. When it has to be resorted to artificially it is without danger, if carried out in accordance with the principles that govern modern surgery. (From Report in the Medical Press and Circular, August 30, 1899.)

# Medicine.

## GENERAL MEDICINE AND THERAPEUTICS.

### Art. I.—ANOMALOUS ERUPTIONS IN TYPHOID FEVER.

By J. M. Da Costa, M.D., LL.D., of Philadelphia.

[The details of the cases and some other parts are omitted.]

The characteristic lenticular eruption in typhoid fever has been so well studied that there is little to be added to our knowledge of it; but, irrespective of the significant rose-spots, there are rashes which are comparatively rare, imperfectly understood, and become the cause of confusion and error. The two that I shall specially examine are a diffused erythema simulating scarlet fever and an eruption like that of measles.

[The author then records two cases of typhoid fever with a scarlatiniform eruption.]

There are in the second case some points for special study. The scarlatinal rash appeared in the first week and at a time in advance of the characteristic rose-spots. The rash was uniform, was not, as in the first case, preceded by mottling, was easily influenced by pressure, did not apparently modify the temperature, and persisted to the last. In its early appearance it was like a case described by Murchison, in which a delicate scarlet rash all over the body preceded for two or three days the lenticular spots of enteric fever. The scarlatiniform rash may remain through the fever, though it rarely does so. Irrespective of its appearance in the first week, it may come on late in the disease, and I have known it to manifest itself even in convalescence (case of Thomas G., Pennsylvania Hospital, December, 1880) and to return in a relapse. Its character may be thus described: It is a uniform red rash, like scarlatina; it is seen all over the body, though not so in every instance. It is more distinct in some places than in others. It is easily influenced by pressure. It has its periods of greater or less intensity, of partial disappearance, of vivid return. It lasts generally a week or somewhat longer. It passes away without desquamation—at least I have never seen this happen. It does not perceptibly influence the course of the temperature. It is for the most part unconnected with sore-throat or with albuminuria. As regards albuminuria, I have observed this in some of the cases I met with, but it was a prior condition connected with the typhoid fever. With reference to sore-throat, this was in a mild form in the second case, and Jenner mentions an instance in which slight sore-throat was an accompaniment, and typhoid fever was mistaken for scarlet fever. Save under the exceptional circumstances of attending sore-throat and desquamation, there is no difficulty in determining the two diseases, or in diagnosticating that scarlet fever is not intercurrent in typhoid.

Rarer than the scarlatiniform eruption, and much more misleading, is an eruption like measles. In Case 3 the measly eruption was limited in its extent. It was much more diffused in the next case, which, moreover, afforded a good opportunity of studying the question of its association with any temperature changes. The similarity of these cases of typhoid fever with measly eruption to typhus fever was very great, and, when we have cases in which the nervous symptoms are pronounced and enteric symptoms absent, it is very difficult to come to a conclusion, unless the malady has been seen from the beginning and the temperature has been studied from the beginning; for the measly rash common in typhus fever and very uncommon in typhoid has in both much the same appearance. How much alike typhoid with measly rash may be to typhus is proved by Case 5. Looking back over the history, though the case is still not free from doubt, I believe it to have been one of typhoid fever, rendered uncertain chiefly on account of the peculiar measly eruption here under consideration. Another error likely to arise is due to the occasional occurrence of true measles in typhoid fever. [Cases 6 and 7 were of this kind.] When we contrast these cases of co-existing measles and typhoid fever with cases of typhoid fever in which a measly rash happens, we find striking differences. First, in the character of the eruption. This in true measles is coarser, more markedly papular, and has the well-known crescentic arrangement, which is not seen in typhoid fever. Secondly, there is itching and there is desquamation, which are also not observed in the typhoid fever rash. Moreover, the presence of the coryza and catarrhal symptoms is very significant in the intercurrent measles. But of greatest value and meaning is the temperature record. In the measly eruption of typhoid the eruption has no marked influence on the temperature, or greater variations are not met with than belong to the stage of the typhoid fever in which the measly eruption may occur. It is different, as is seen by studying the temperature in both of the cases just described, in intercurrent measles.

The temperature here rises decidedly in the days immediately preceding the eruption, in the prodromal stage, exactly as in ordinary measles, and it goes on rising, or remains high, with the spreading eruption. This is quite unlike what happens in the measly eruption in typhoid fever. Where we are nearing convalescence, and the temperature has been ranging around the normal line, these temperature changes are of the greatest value in diagnosis. They are necessarily less so earlier and while the fever temperature of the enteric fever itself is still a pronounced one.

We have thus described a scarlatiniform eruption, a morbilliform eruption, and also spoken of the mottling of the skin. This mottling, as in typhus, is due to a subcuticular rash, and may remain as the only eruption, or precede or attend either of the other kinds. The interesting question now arises, Are all these really separate forms, or merely different expressions of the same pathological condition—in reality one affection? I believe they are one, for I have seen them combined in the same patient, Case 8, and apparently interchangeable.

There is nothing in these rashes which seems to add gravity to the prognosis. It is true—though there are instances in this paper which show the contrary—that they mostly happen in severe cases of typhoid fever; especially does the morbilliform eruption, which is much more apt to occur later in the disease and to be associated with graver symptoms than the scarlatiniform rash. But the prognosis is to be determined by these symptoms rather than by the eruptions; and, as regards treatment, they call for no special line of therapeutics. As febrile albuminuria may co-exist we must pay close attention to the renal secretions. It is from the point of view of diagnosis and pathology that these rashes merit attention and serious study.—*American Journal of the Medical Sciences, July*, 1899.

## 2.—PYREXIA DURING CONVALESCENCE FROM TYPHOID FEVER.

By Professor Potain,
Of Paris.

Attention was recently called in the Piorry Ward, to a young woman who was admitted to the hospital suffering from typhoid fever. We hesitated for a time as to the diagnosis, especially as this patient, a Dutch woman, understood no French, and by reason of the malady was plunged into a state of extreme prostration. At the end of a few days all doubt was removed by the appearance of lenticular rose spots on the abdomen.

The fever followed the usual course, and about the fifteenth day the normal temperature was attained and everything led to believe that the patient had entered on convalescence. One evening, however, the temperature rose and oscillated for several days between 102 degs. and 104 degs. F. What could have been the cause of this increase of the temperature in the course of convalescence from typhoid fever? That is the question I wish to examine in this present lecture.

You know that in typhoid fever the temperature follows, at first, a regular ascensional movement; it then remains a few days stationary, and finally it gradually falls, returning to normal, in uncomplicated cases, towards the twenty-first day; the temperature not unfrequently falls for a few days below the normal. Now, there are a certain number of causes which may interfere with the classical curve of the temperature absent during convalescence. First there are cases where the thermometer is seen to go up suddenly two or three degrees above the normal level. This rise, which may persist four or five days, coincides with the change from liquid to solid food. It is what is called the *febris carnis*, and has but little significance.

In other cases, the temperature creeps up gradually until it attains the height observed at the outset of the malady, and a second crop of lenticular rose spots are not unfrequently observed in such cases. I proposed to apply the term *reiteration* to this phenomenon in order to distinguish it from relapses, with which it is so frequently confounded. Relapses which really deserve that name are the result of a fresh infection, while reiterations, on the contrary, simply continue the work of the primary infection. Two or three successive reiterations can be observed. I myself have witnessed four consecutively of gradually decreasing severity. The distinction between reiterations and relapses is very important, because the former are generally very benign, while the latter are frequently fatal. In some convalescents the fever reappears under a paroxystic form, called by the Germans nach-fieber, or *secondary fever*. It sets in without any apparent cause, and the temperature may rise from one to three degrees for some days, sometimes insulating the march of intermittent fever, the paroxysms being separated by an interval of two or three days of normal temperature.

Among the latent accidents capable of causing a rise of temperature in convalescents from typhoid fever, constipation takes the first place; it would seem at first that the intestine ought to empty itself easily after a malady, of which diarrhœa was one of the principal symptoms. Yet in convalescence from typhoid constipation of an obstinate character is observed, producing tympanitis and fever. In such cases attention is immediately drawn to the constipation, and the diagnosis is rendered easy, as indeed is the treatment. On the other hand, the fever may be the result of chronic enteritis usually localised in the small intestines, and generally provoked by ill-advised diet. The cause of the return of the fever may also be due to disturbances of the liver or kidney. There is no organ in fact that may not be affected more or less during convalescence from typhoid fever. Thus the lungs may become the seat of various lesions, acute bronchitis, broncho-pneumonia, tuberculosis, &c. It has been asserted that patients who entered the hospital for typhoid fever have there contracted tuberculosis, but such a statement is an exaggeration, to put it mildly. No doubt pulmonary phthisis does sometimes appear during convalescence from typhoid, and it is obviously difficult to affirm positively that hospital infection was not the cause, but for my part I have never witnessed chronic tuberculosis developing under these conditions, except in patients who had displayed indubitable signs of the malady on admission to hospital. Hospital infection is less improbable when the complication takes the form of acute tuberculosis; I have observed several cases of this kind. In one of them I found, at the autopsy, two varieties of ulceration, one appertaining to the usual lesions of typhoid fever, while the other was distinctly tuberculous as proved by the presence of Koch's bacilli.

You all know how frequently suppuration follows typhoid fever, sometimes it develops insidiously, but more frequently it determines a rise of temperature in the convalescent patient. These suppurations may present themselves in regions very far apart, muscles, larynx, thyroid body, osseous system, &c. This concludes what I have to say on this occasion concerning the accidents susceptible of provoking a return of the fever. These complications are sometimes due to the presence of the bacilli of Eberth, alone or in association with other microbes; frequently they are the result of secondary infection. There are also cases in which the fever might be called idiopathic since the cause cannot be discovered, and this is the case in respect of the patient who is the subject of this lecture.—*Medical Press and Circular, August* 16, 1899.

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## 3.—NOTES ON THE SERUM REACTION IN TYPHOID FEVER.

By J. H. Churchill.

[The following is taken from Mr. Churchill's paper.]

*Method of obtaining the Reaction.*—The method adopted in the Pathological Laboratory has almost invariably been the following:—In the ward, the patient's ear or finger is pricked, and into the resulting drop of blood is introduced the end of a capillary pipette ; enough blood for the purpose of the reaction runs into the pipette, the ends of which are then sealed. In the laboratory, the ends of the pipette are broken off, the blood is expelled into small glass tubes, and to it are added nine times its volume of sterile broth (each volume being measured by allowing the broth to enter the pipette to the level formerly reached by the blood). The blood is thus diluted 1 in 10. The tube is plugged with cotton-wool, labelled, and allowed to sediment. A broth tube is inoculated from the stock culture of typhoid bacilli and incubated for twelve to twenty-four hours. A clean cover-slip is then taken, and on it are placed side by side five or six drops of the diluted blood, measured by a platinum wire loop; with the same loop, to roughly ensure the drops being of the same size, the same number of drops of the fresh typhoid culture are placed on the cover-slip and then mixed with the blood, which is thus diluted 1 in 20. The cover-slip is inverted on a slide, and ringed round with wax. The mixture is examined immediately under a microscope (a $\frac{1}{6}$ objective is quite sufficient), and again at intervals for four hours from the start. If, at the end of this time, no sign of reaction has occurred, a negative report is made. No special precautions are needed for keeping the blood sterile, since the time of observation is too short to allow much interference with the reaction by the growth of other organisms : the patient's finger need not be sterilised ; but if the blood is to be kept, especially in warm weather, until the typhoid culture is ready, it is well to sterilise the glass receptacles used by passing them through the flame, taking care to cool them before use, since the "clumping" power of blood is destroyed at 75° to 80° C.

*Dilution of the Blood.*—The degree of dilution of the blood conventionally used in this laboratory is 1 in 20. It has been found that the blood of certain people who have not suffered from typhoid fever gives a well-marked reaction to this serum test if the degree of dilution is low, but that—in the experience of most observers—such blood fails to give any sign of reaction when diluted to 1 in 10 or more.

*Description of the Reaction.*—When the fresh culture is first mixed with the blood, the bacilli are seen swimming actively to and fro in even distribution through the field. The first sign of reaction is the clustering together of a few bacilli which lose their progressive motion, but remain actively struggling ; to these others are added, and the cluster becomes larger and more compact, only the outer ones seeming to have room to move. Meanwhile, and sometimes quite early in the reaction, the unattached bacilli gradually lose their activity, move sluggishly across the field, or become quite motionless. Three or four clusters or "clumps" may often be seen in a single field. Between a complete reaction, where nearly all the bacilli are in clumps and none of the free ones are motile, and a reaction where only a few loose but definite clumps are found, the remaining bacilli being free and sluggishly motile, all grades occur. The essential of the reaction is the formation of clumps; loss of motility is a phenomenon of secondary importance, occurring sometimes under conditions other than enteric fever. It has on some occasions been noticed in this laboratory that the clumping begins in the neighbourhood of any air-bubbles present under the cover-slip. This is probably due to the tendency of the bacilli to congregate in the neighbourhood of an oxygen supply. In nearly every case tested, whether the result was positive or not, the slides were kept at 37° C., and re-examined on the following day; but in no case was there any alteration seen in the conditions of the bacilli, save that their motility had materially lessened, and in many cases ceased.

*Time limit of the Reaction.*—Out of 71 positive cases, 22 have been well-marked or complete within three or four minutes; 17 others have become well-marked within one hour, and 27 within four hours—nearly all before the second hour.

*Date of appearance of the Reaction.*—Though, as a rule, the best marked reactions are obtained in well-marked cases of typhoid fever, yet many such cases occur where the reaction is not so early nor so marked a phenomenon as it is in milder or less typical cases; and we have been unable to demonstrate any relation between the acuteness of the disease or the prominence of any particular symptom, and either the quality of the reaction or the date of its appearance, which may at all compare with the relation established between the intensity of the infection in pneumonia or the resisting power of the patient, and either the amount or the date of appearance of the leucocytosis. It seems rational to suppose that some such relation exists, but the evidence obtained during the year is wholly insufficient for the discussion of such a theory; this is partly owing to the lack of early cases of the fever, and partly to the difficulty of establishing the "first day" of the disease. For the same reasons we have had little opportunity of averaging the dates of appearance of the reaction; but of 40 cases in which the date of the first day of the disease could be reasonably approximated, it was found that the average date of appearance of the reaction was the thirteenth day. We were only able, however, to test ten of these cases before the reaction was apparent.—*St. Bartholomew's Hospital Report, Vol. xxiv., p.* 205.

# 4.—THE PRESENT STATUS OF THE WIDAL REACTION.

[The following is a leading article taken from the *Medical News*, September 2, 1899].

The Widal reaction has come to stay. There can be no doubt of this now that the results of the army of earnest workers in this field have been given to the profession. In the early history of the reaction the medical press not infrequently contained reports of isolated cases in which the serum reaction was wanting, but in which clinical symptoms or even autopsy findings inclined the observer to the diagnosis of typhoid. Perhaps even more numerous were the evidences in favour of other diseases in cases in which the reaction was present. Influenza, malaria, pernicious anæmia, acute miliary tuberculosis all contributed instances of undoubted reactions. No attention was paid to the fact that at least three of the above affections are not uncommonly mistaken clinically for typhoid fever, or that without absolute bacteriological findings or an autopsy (or in malaria the presence of the plasmodium of Laveron in the blood) they were not justified in their conclusions that they were not dealing with typhoid. Then came the announcement that the blood of patients who had once been afflicted with typhoid may retain for years its agglutinative reaction. While this fact of itself was of some value, and necessitated a careful review of all those non-typhoid cases giving the reaction, of far more importance was it as an evidence of immunity to subsequent reinfection, viz.: the power attested by this reaction of the blood-serum of a patient afflicted with typhoid fever to destroy the typhoid bacilli entering its channels. In some patients this agglutinative power is exhausted before the patient has well entered upon his convalescence; a relapse occurs which may prove more virulent than the original attack. In others this power prevails over a period which can only be measured by years—three, five or even longer.

To quote the statistics of Cabot: out of 5,798 cases of typhoid; gathered from many sources both at home and abroad, the test performed in a variety of ways, with cultures obtained from many sources and of varied ages, positive reactions occurred in over 97 per cent., truly a remarkable result. But the scientific observer cannot rest satisfied with assurances of a positive character; negative evidence that the reaction does not occur in other diseases must be forthcoming. Cabot was enabled to gather from the same authorities almost as many instances of other diseases in which the application of the reaction gave negative results in fully 95 per cent. Of the remaining 5 per cent. we may rest assured that some of the subjects had had typhoid previously, and this fact of itself would help to better the record. By greater simplicity and unification of technic and by subjecting every case not typhoid but giving the reaction to careful investigation to determine if the disease has formerly existed we may confidently expect an even greater percentage of positive reactions in typhoid and of negative reactions in our control experiments.

There is one point in which our statistics are somewhat lacking, and that is the percentage of typhoid (the existence of the disease being absolutely proven by post-mortem findings) that exhibits a positive reaction, provided the serum is taken from the body some time before the onset of the death agony. In the experience of the writer, and other observers have narrated the same, the serum when taken just before death does not always give a positive reaction, though previous tests may have proved its presence unmistakably and the autopsy showed the characteristic lesions of typhoid.

Following closely on the heels of Cabot come the statistics of Anders and McFarland, published in the *Philadelphia Medical Journal* of April 8 and 15, 1899. These observers, in testing the blood of 230 typhoid patients, relics of the Spanish-American War, found the reaction in 219, or in more than 95·5 per cent. Stengel and Kneass in the "Year-Book of Medicine" (1898) collected reports of more than 2,000 cases of typhoid in which the reaction was found in 95·5 per cent., while in almost 1,500 non-typhoid cases the reaction was present in only about 1½ per cent. We have, then, a test for typhoid, which, when performed with proper precautions, if not absolutely diagnostic, is certainly one of the most reliable signs of the disease. It is not frequently present in other diseases, if at all, as is the diazo reaction of Ehrlich, nor is it so difficult though far more reliable than the leucocyte count. It has certain limitations, it is true. As a rule, while not appearing during the first few days of the disease, it is manifest before the rose-coloured abdominal eruption appears. Occasionally it does not appear before the fourth or fifth week, from which it may be inferred that patients dying of the dangerous complications of the second or third week may never have given a positive reaction. A previous attack of typhoid within a period of one to three years interferes absolutely with the value of the reaction. It is frequently not present if the blood is withdrawn while the patient is at the point of death.

## 5.—THE TREATMENT OF SCARLET FEVER.

This subject was discussed at some length in the section of Diseases of Children at the annual meeting of the American Medical Association (reported in the *Philadelphia Med. Journ.*, July 1), and Dr. R. A. Birdwood, Medical Superintendent of the Park Hospital, Lewisham, has stated his experience in the *Hospital*, April 15, 1899. In an ordinary mild uncomplicated attack of scarlet-fever Birdwood keeps the child in bed for three weeks on a low diet with stewed fruit till three days after the temperature has fallen to normal. The bowels are opened daily, and the urine tested for albumin on alternate days. The reason for so long a stay in bed is that if nephritis supervenes it usually does so about the end of the third week, and the maintenance of the regular action of the bowels seems to have a marked and beneficial effect in preventing œdematous swellings of the legs. They are also detained in bed whilst albuminuria or dilated heart persists, and when in bed are blanket-bathed daily. It is not prudent to use the bath during this time, as faintness or a bad colour comes on occasionally. During convalescence, if all goes well a warm soap and water bath is given three times weekly. As a rule, this is sufficient treatment for desquamation. B. Gilbert recommends anointing the skin with lard, vaseline, or lanolin. If desquamation continues, a weak acid solution, such as an ounce of dilute acetic acid to half a pint of water, applied to the soles or palms on lint for a quarter of an hour, or else rubbing with glycerine and borax, does much to remove adherent epithelium. Desquamation may go on for three or four months or even longer, and it is quite common for it to come on twice and sometimes three times.

*High Temperature.*—B. Gilbert objects to the use of coal-tar antipyretics and to the full bath unless the fever is very high and there is very active delirium. The nervous excitement can best be allayed by chloral hydrate. Slagle and Ewing agree in objecting to antipyretic drugs, but advocate the free use of cold water for drinks, enemas, and packs. By drinking water freely they contend that the toxins are eliminated. Quayle prescribes lithia water, and Ewing prescribes potassium acetate in addition. Garrison has used acetanilid for eight years, and finds it useful; it promotes a feeling of well-being, and if combined with soda bicarbonate does not diminish the renal secretion. Garrison does not hesitate to employ antipyrin if the pulse denotes high arterial tension, and has given it to young infants in doses of a quarter of a grain. Birdwood finds that the high temperature of scarlet fever is well controlled by sponging with tepid water, and the patient generally feels better after it is done. It is good practice to sponge whenever the four-hourly temperature exceeds 39° C. Hyperpyrexia of scarlet fever is not controlled by baths or drugs; the former may be frequently repeated, but the temperature rises again, and the patient becomes rapidly worse. Now and again a patient recovers after a temperature of 41° C., and this encourages one to keep on with tepid sponging. An undoubtedly good effect is sometimes observed in the reduction of temperature on removal of blankets and leaving the patient covered with a sheet only. If either sponging or removal of blankets induces shivering, or a feeling of coldness, or actual coldness of the extremities, it should be discontinued, and warm water bottles should be used. A thirsty fever patient should be given plenty of drink, and it is well to remember that there is sometimes a repugnance to milk. Water relieves thirst best, and should be given. Grape or orange juice is generally liked, and does good. Barley water is a suitable drink.

*Sore Throat.*—A chlorine gargle is used at the Park Hospital (chlorate of potash, ℥iss.; hydrochloric acid, ʒvj., with five pints of water added after the evolution of the gas) when an acid preparation is desired; or Liq. sodæ chlorinatæ 1 in 15 of water when an alkaline. Equal parts of either of these chlorine solutions and warm water are mixed just before use. If the patient is not old enough to gargle, a ball syringe with a long nozzle attached is used for flushing out the fauces. Two 4 oz. syringefuls are enough. Should the patient resist the attempt to pass the nozzle between the teeth, there is no occasion to use force to do so. The fauces can be well washed by passing the nozzle between the cheek and the teeth, so that its point goes just beyond the last molar tooth. This should be done first on one side, then on the other. The patient should be held with the face downwards. The practice of gargling the throat is far better than swabbing, for the tissues are often soft enough to be damaged by the latter proceeding.

*Nose and Ear Discharges.*—A solution of boric acid (℥ii. to 5 pints) is used by Birdwood; before use it is mixed with an equal quantity of warm water.

*Nephritis.*—Birdwood usually orders loin poultices or fomentations. In some instances the drawing of a few ounces of blood has been followed by a flow of urine; in others, no such result has ensued. Seidlitz powders or compound liquorice powder should be given, not calomel. Solomon prescribes cascara and sodium phosphate, and also a decoction of scoparius (℥i. to Oi.) to relieve the kidney congestion.

*Joint and Muscle Pains.*—Solomon has found acetanilid useful in relieving the severe headache and pains in joints, but where muscular pain was complained of he gave phenacetin instead. Birdwood employs salicylate of soda.—*Dr. Francis J. Allan's abstract in Treatment, September* 14, 1899.

## 6.—SCARLATINA IN INDIA.

By Arnold Caddy, F.R.C.S. Eng., Member of the Clinical and Pathological Societies of London ; and

J. Nield Cook, D.Ph. Camb., Medical Officer of Health, Calcutta.

[The details of the cases, as well as some other parts of the paper, have had to be omitted here.]

Two cases of a disease simulating scarlatina very closely having come under our notice, we have thought fit to record them in view of the freely expressed opinion that scarlatina is unknown in India, except in a few instances where it has been directly imported from Europe. Both these cases occurred in the European Female Orphan Asylum, 79, Lower Circular Road, Calcutta. This institution was founded in 1815, and the occupants are girls who have lost either father or mother or both parents. The majority of the children are of pure European parentage, and with very few exceptions have been born and bred in India. The buildings are kept scrupulously clean. The water-supply is excellent, and the surface drains are periodically overhauled. There are no sewer connections. The milk-supply is good, the cows being kept on the premises in a large airy, well-drained byre. All milk is boiled before consumption, and the food is carefully inspected by the Sisters every day. As a general rule, the health of the inmates is excellent.

Shortly after the first patient, aged 6 years, was taken ill, three other inmates of the Asylum developed simple sore-throats, without fever or rash of any kind ; they were isolated for a while, and in a few days allowed to return to their every-day occupations. On January 19 the drains of the Asylum were thoroughly overhauled by the Corporation Sanitary Authorities and pronounced in good order. The cow byre was inspected, and as several of the cows and calves were covered with an impetiginous eruption on the skin of the neck and groin, Dr. W. J. Simpson, who was then Medical Officer of Health, made cultures from the skins of these animals on January 24 ; but although a coccus was obtained, the results were not very definite. The strictest inquiries were made as to possible infection from outside, but without result. Of the friends who visited the Asylum, none had come in contact with any cases of fever and sore-throat. No parcels had been received from Europe, and very few letters, none in fact from households where scarlatina had been treated.

In the second case, aged 13, we instituted most careful inquiries with a view to eliciting a history of possible outside infection. No cases have been heard of amongst the families of friends living in Calcutta, and who visit the occupants twice a month. No cases either have occurred among the troops in Fort William, Barrackpore and Dum-Dum. Since April 1, 1899, the occupants of the Orphan Asylum have received only five letters and two parcels from the United Kingdom, and no one of these has come from a house where there has been a history of scarlatina or sore-throat. As regards communication by post with the rest of India, during the same period one parcel and one letter were received from the South Lancashire Regiment quartered at Jabalpur. Lieutenant-Colonel W. R. Quayle, I.M.S., however, wrote to us on July 1, saying no cases resembling scarlatina had been seen in the station of Jabalpur, nor among the troops quartered there. The patient herself personally has received no letters or parcels. This second patient has remained within the Orphan Asylum compound for some months and has had no friends come to see her from outside. However, on May 27 last, she was visited at the Asylum by two friends, a boy and a girl, aged 10 and 7 respectively. They all three played with one another and were seen running about arm-in-arm. These two young friends live in a large healthy house in Chowringhee and form part of a large household of European adults and children, besides the usual contingent of native servants. Careful inquiry has failed to elicit a history of sore-throat or fever in any member of this household, and the two children in question have kept perfect health for a long time past. The cows were carefully examined by us, and nothing abnormal was discovered. We were informed that they had not been out of the compound for several months, and no new cows had been brought in by the cow-keeper. We now give some account of our bacteriological investigation and of the experiments carried out by us in connection with the second case. [The details of the investigation have had to be omitted here.]

The fact of our getting a streptococcus in almost pure culture from the throat and skin of the second patient, which on inoculation into calves produced a febrile attack of definite duration, and in one case, at least, an eruption appearing on the second day, and answering to the descriptions of Klein and Power of the so-called Hendon Disease, from which eruption a similar streptococcus was obtained, and further that this streptococcus differed from streptococcus pyogenes in the fever it produced and still more in producing no local reaction, points strongly to the conclusion that the streptococcus we obtained was the streptococcus scarlatinæ and no other streptococcus, and as a corollary, that the case of the patient from whom it was derived was a case of true scarlatina and no other disease closely simulating it in the clinical symptoms. At the same time we are well aware that a single experiment is not conclusive, and consider it desirable that further experiments should be undertaken to confirm the result we obtained or prove it to have been merely a curious chain of coincidence. As a matter of speculation, we think it probable that at the time of the first case appearing in the Female Orphan Asylum the cows were suffering from Hendon Disease, though the streptococcus was not successfully isolated, and that the infection may have remained somewhere in the place ever since. The fact of no general outbreak occurring, if this hypothesis is correct, can only be attributed to the low infective power the contagium appears to possess in tropical countries. We have carefully examined the literature on the subject of scarlatina in India with a view to giving a *resumê* of all cases published as having occurred in this country since 1871, and quoting the opinion of those who have written on the subject in the same period. [The details of the authors' elaborate search into the literature is omitted here.]

We think the evidence we have brought forward goes to prove that scarlatina has occurred in India, and that the disease as such has not been confined to the European and Eurasian communities. Owing to the want of details, it is impossible to deduce much information regarding the season of the year when scarlatina most prevails in India: our first case occurred in the cold weather and our second in the hottest of hot weather. In the majority of instances the source of infection could be traced directly or indirectly to Europe, but there are many cases where such infection cannot be ascertained, our own cases being among that number. It is striking how often albumen has not been found by observers. However, its presence in scarlatina is not absolutely essential. We believe that in no instance before our second case has a systematic bacteriological investigation been carried out in India with regard to this disease, and we hope others will employ this means of establishing the diagnosis of the cases they encounter from dengue, rubeola, &c. If Calcutta possessed a vigorous medical society, a committee could be formed to report on this question, but as there is no such body to take it up, we hope that the editors of the *Indian Medical Gazette* will come forward and place the question on a sound footing by again sending out circulars as in 1871, not to the medical practitioners in Calcutta only, but to all official and non-official medical men practising in India, Burma and Ceylon, calling for individual opinions and for particulars of cases that may have been met with during their practice in the East.—*From a Reprint of Messrs. Arnold Caddy & Cook's paper in the Indian Medical Gazette, August*, 1899.

# 7.—THE DIAGNOSIS OF DIPHTHERIA.

By F. Foord Caiger, M.D., M.R.C.P.,

Medical Superintendent of the South Western Fever Hospital, Stockwell.

[The following are excerpts from Dr. Caiger's paper. The author thus summarises the utility of the bacteriological test in actual practice.]

A negative result after careful examination of material taken from the throat and of the culture derived from it on at least two occasions may be held practically to exclude diphtheria. A positive result after examination of a throat presenting a definite pellicular exudation or from the larynx without visible exudation on the fauces may be regarded as sufficient evidence of diphtheria. The presence of short bacilli (suggesting diphtheria bacilli) in the nasal discharge alone, even though attended with isolated spots of exudation on the tonsils, cannot be held to be distinctive unless confirmed by inoculation into animals.

[The following remarks are made upon the clinical diagnosis.]

In the differential diagnosis of faucial diphtheria it is mainly in connection with follicular tonsillitis and the exudation throats present in some cases of scarlet fever that difficulty is most often experienced. From follicular tonsillitis the differentiation may be most difficult, and, indeed, it may be impossible apart from the bacteriological test. The distinction is rendered none the less difficult owing to the fact that in some cases of diphtheria the exudation commences at the very points which are most characteristic of follicular tonsillitis—viz., at the mouths of the follicular crypts in the form of spots or little patches of exudate, which at a later stage enlarge and ultimately become confluent, so as to form a continuous pellicle covering the surface of the tonsil, but at an early stage the appearance of both is very similar. The clinical features on which some reliance can be placed are that in follicular tonsillitis the spots rarely coalesce and the exudation never spreads to adjacent parts, but remains limited to the tonsils. Both tonsils are usually affected very much to the same degree, and the same thing holds good for the swelling of the subjacent glands, while in diphtheria it is perhaps more common for one side to be involved more than the other and for the gland swelling to be proportionally greater. In follicular tonsillitis albuminuria is far less common, but the temperature is usually higher—in fact, the general statement is justified that the constitutional disturbance in follicular tonsillitis is likely to be more pronounced than in a case of diphtheria of sufficient mildness to be mistaken for it. It should be remembered, too, that in a child the attack is more likely, *primâ facie*, to be one of diphtheria than of tonsillitis simply because in childhood the latter disease is relatively uncommon. Laryngeal implication never supervenes, nor does any subsequent paralytic affection, whether of the palate, accommodation, or of the skeletal muscles—so distinctive of diphtheria.

Now, of those cases of scarlet fever which are attended with an exudation simulating the appearance of diphtheria it may be stated generally that they are almost invariably severe attacks and the characteristic symptoms of scarlet fever are usually so pronounced that the presence of that disease can hardly be overlooked. The difficulty in this instance is usually to decide whether the exudation is purely scarlatinal or whether, as is sometimes the case, it is an attack of scarlet fever complicated with co-existent diphtheria. The scarlatinal exudation is limited to the tonsils practically always; it is of a cheesy, friable consistence and it is easily removed with a camel-hair brush, tending to disappear spontaneously in a day or two. If it be genuine diphtheria, on the other hand, it is usually thicker, tough, gelatinous, or fibrous-looking, incapable of removal without lacerating the subjacent tissue, and it separates *en masse* after an interval of several days. In a case of uncomplicated diphtheria, of course, the exudate may be thin, friable, and easily detached, but in these concurrent attacks the condition is usually grave and the exudation as a rule presents the characters which I have mentioned. The constitutional depression, too, is severe and the case is very liable to terminate fatally with cardiac failure or to present some form of paralysis during early convalescence. As far as my experience goes it is much more common for a case of diphtheria attended with an erythematous flush to be mistaken for scarlet fever than for a case of scarlet fever with exudation to be confused with diphtheria.

In laryngeal diphtheria or membranous croup the differential diagnosis from simple laryngeal catarrh may be very difficult during the early stage, and this is particularly so when the larynx is the primary seat of the disease. It is very fallacious to place any reliance on a history of exposure to cold or on the apparent absence of any source of infection. Nor can any trustworthy indication be derived from the character of the respiration or the quality of the cough or laryngeal sound. I know of no other reliable test than a bacteriological examination of some of the laryngeal mucus, which can be easily obtained by passing a swab mounted on a bent wire into the upper part of the larynx. But this, of course, means the loss of valuable time unless the diagnosis can be made by means of an immediate microscopical examination of the material on the swab, which is usually possible to anyone conversant with the diphtheria bacillus and which in most cases will prove reliable. The fact that "cases of simple catarrhal laryngitis are never fatal" is not of much assistance in the early diagnosis of the condition. In cases, however, in which the fauces are involved primarily or even coincidently with the larynx—a condition which is of common occurrence—there is not much room for doubt. The appearance of the very smallest patch of exudation on the tonsil in a case of croup is practically sufficient to establish it as one of laryngeal diphtheria and calls for prompt and efficient treatment. This is above all the class of case for showing what a splendid weapon we possess in antitoxin.—*Lancet*, *June* 17, 1899.

## 8.—THE BACILLUS DIPHTHERIÆ IN MILK.

By J. W. H. Eyre, M.D., D.Ph.,

Bacteriologist to Charing Cross Hospital, and Lecturer on Bacteriology in the Medical School; "Ernest Hart" Memorial Research Scholar.

[The following is included here because of the importance of the subject. A few only of the technical details have been omitted.]

In local epidemics of diphtheria the *primâ facie* evidence has frequently implicated the milk supply as the vehicle engaged in the dissemination of the disease, but as in the case of waterborne enterica, the difficulties attending the investigation are so great, and the action of the original contamination usually so transitory, that the specific organism of the disease has but rarely been isolated from the fluid medium conveying it. In fact, with the exception of that recorded by Bowhill in the *Veterinary Record*, I am not aware of any sufficiently authenticated instance; and although I have several times been called upon to examine samples of milk suspected of containing the Klebs-Loeffler bacillus, it was not until February of this year that the investigation of such a sample yielded a positive result. During the latter months of 1898 and the beginning of 1899, a number of cases of diphtheria had occurred among the inmates of a large school, and in the course of an inquiry as to the channel by which the disease had gained access to the school, I received samples of the milk supply in bottles for bacteriological examination.

*Analysis.*—After agitating each bottle in order to ensure a thorough and even admixture of its contents, and well flaming the projecting portion of the stopper, and then the neck, 50 c.cm.

of the milk were withdrawn by means of a sterile pipette, added together in a sterile flask and labelled, "Mixed milk." The "mixed milk" was now filled into twelve small sterile tubes, labelled A to K, and centrifugalised for about ten minutes, the machine, one of the Dairy Company's centrifugalisers, running at some 2,000 revolutions per minute. On removing the tubes from the centrifugaliser the milk in each was seen to have separated into three distinct layers. The uppermost, consisting of the cream, formed practically one-quarter of the column of fluid ; below this came the separated milk ; whilst the rounded portion of the lower extremity of the tube was filled with the sedimented deposit.

*Microscopical Examination.*—The Tube A was used for microscopical examination. *Cream.*—Coverslip film preparations made from the cream (which formed a firm mass, of about the consistency of butter, and necessitated the use of a very stout platinum spatula to remove it), and stained with a view to the demonstration of bacteria, showed a fair number of micro-organisms—both bacilli and cocci—also a very few leucocytes. No bacilli were observed which would resist decolorising with 25 per cent. solution of sulphuric acid. *Separated Milk.*—No micro-organisms could be detected in this fluid. *Centrifugalised Deposit.*—As in the cream, both bacilli and cocci were noted in the films prepared from the deposit, but in much fewer numbers. Leucocytes were present in numbers decidedly in excess over those found in the deposit from healthy "one-cow" milk similarly treated, also some epithelial cells and granular *débris.*

*Cultivation.*—Portions of the cream from five of the tubes, lettered B to F were used to inoculate tubes of inspissated blood serum. The centrifugalised deposit from tubes lettered G to K was used to plant fifteen more blood-serum tubes, and in order to minimise the risk of diluting the deposit and to render it more easily get-at-able, the greater part of the cream was removed from each tube in the form of a cylinder, by means of a small sterilised cork-borer. Through the orifice thus made a sterilised pipette was introduced and the separated milk pipetted off. After the removal of the pipette the platinum loop was easily passed into the tube, and a portion of the deposit taken up. The entire batch of thirty tubes were then placed in the incubator regulated at 37·5° C., and examined at the end of twenty hours, when a growth was found to have occurred in everyone of the tubes. *Naked-Eye Examination.*—The growth in each of the tubes consisted of minute colonies much too closely aggregated to allow of the characteristic development of any one of them, and in all the tubes with the exception of 15 (which appeared to contain a pure culture) a very mixed growth was present, including several chromogenic organisms. *Microscopical Examination.*—As it appeared well-nigh hopeless to search for individual colonies resembling the B. diphtheriæ, coverslip film preparations were made from a surface scraping of the growth in each of the thirty tubes, care, however, being taken to avoid touching with the spatula any such colonies or masses of colonies as were obviously not composed of the B. diphtheriæ. All the films were stained with well-matured carbolic methylene blue, and carefully examined with a $\frac{1}{12}$ inch oil-immersion lens. This microscopical examination resulted in the discovery that bacilli morphologically resembling the B. diphtheriæ were present in no fewer than fourteen of the tubes (namely, Nos. 1, 2, 4, 6, 10, 12, 13, 14, 15, 16, 21, 22, 24, and 30). The bacilli represented two well-defined types, the one the typical segmented and clubbed form known as the Klebs-Loeffler bacillus, the other the type described by Peters as the "short pathogenic," but which is more happily termed the "sheath" bacillus. The two varieties were present in practically equal proportions, the segmented form predominating in eight of the tubes, whilst in the remaining six the sheath variety was the prevailing type. Now, on comparing the numbers of the tubes containing these suspicious bacilli with the list of preliminary inoculations given above it will be seen that whilst every loopful of the centrifugalised "cream" contained these (?) diphtheria bacilli, only three out of the five loopfuls of the centrifugalised deposit appeared to do so ; and this result one expected from the ratio existing between the number of organisms present in the coverslip films made directly from the centrifugalised "cream" and "deposit" respectively.

*Isolation.*—The next step was to isolate one of each of the two types present in the milk, to study their morphology and biology and to compare them with a known pathogenic B. diphtheriæ, obtained from a diphtherial throat, as a control. The sheath variety was easily isolated from Tube 15, which was almost a pure culture to start with. This was labelled "Δ 15." The segmented variety (from Tube 30) gave considerably more trouble and required "consecutive" planting upon twelve blood serum tubes before it could be obtained in a state of purity. This bacillus was labelled "Δ 30." Both types stained equally well with the aniline dyes and also by Gram's method. The distinction between the segmented form "Δ 30" and the sheath variety "Δ 15" was extremely well marked in 18 to 20-hour blood serum cultivations when carbolic methylene blue was the stain used, but upon staining coverslip preparations by the method suggested by Neisser—the so-called diagnostic stain—the two were indistinguishable, each showing two dark polar granules and in a few isolated cases a third central one. Every trace of the sheath with its tapering extremities disappeared under these conditions from "Δ 15" and it now presented the appearance of a regular rod of the same size, shape, and colouring as the control B. diphtheriæ. Both "Δ 15" and "Δ 30," after isolation from the milk, were planted upon various media, and carefully compared with cultivations, made under identical conditions, of the control B. diphtheriæ. The media used in each case were : bouillon, glucose bouillon, agar, glycerine agar, inspissated blood serum, gelatine, litmus milk, litmus whey, and potato. Without describing in detail the various cultural appearances, which to the naked eye were those typical of the B. diphtheriæ, it will suffice to say that they were identical in all three sets of cultures, and the acid production at the end of 36 and 48 hours was equal. Each of the two varieties was fully tested by inoculation experiments, which yielded conclusive evidence not only on the point of pathogenicity, but also as to identity, with the B. diphtheriæ.—*British Medical Journal, September* 2, 1899.

## 9.—INFLUENZA OF A GASTRIC TYPE.

By Robert J. Colenso, M.A., M.B. Oxon.

[The following is taken from Dr. Colenso's paper :]

Soon after the invasion of the disease, which commences without prodromata in the ordinary lightning-like manner symptoms of irritation of the alimentary mucous membrane exceed those of the respiratory. This irritation commences as an injection and œdema of the fauces and pharynx, with pain on deglutition and on pressure behind the angle of the jaw. Shortly after this onset, which is accompanied with malaise, and sometimes with coryza, the irritation extends downward along the trachæa and œsophagus, but, excepting in such as are predisposed to bronchorrhœa, or chronic bronchitis, seems to result in the former case in only a slight bronchial catarrh, with scanty and viscid expectoration, accompanied sometimes with dyspnœa and pain over the manubrium sterni. On the other hand, concomitantly with rigors, a rapid rise of temperature to 103° F., or higher, a great increase in the frequency (120-140), and decrease in the volume and tension of the pulse, the gastro-enteric inflammation increases. This is evident from the uniformly coated tongue ; the anorexia increasing to nausea and vomiting ; a frequent slight dry cough ; frontal headache and pain in the scrobiculus, the bowels being usually at first constipated. Such symptoms begin on the second day of the disease, and with them is often found pain in the left hypochondrium and enlargement of the splenic and hepatic areas of dulness to percussion. Also at this period there is considerable muscular tremor, mental hebetude, and insomnia, and on this or the following day symptoms of invasion of the bile ducts shows itself by icterus with bile stained urine. The temperature remains high with slight oscillations ; the pulse becomes quicker, less regular, smaller and of lower tension ; nausea and retching continue, and the thick white and slimy coating of the tongue becomes drier and darker, not seldon of a dark brown or even glazed from a denudation of epithelium. Tormina occur, and constipation yields to more or less diarrhœa, the stools being fœtid, and in appearance a coffee-coloured liquid with powdery mustard-yellow sediment. In fact, at this stage, the disease has a close though not a lasting resemblance to enteric fever, and more rarely to acute dysentery, or even to cholera. But in this gastric form of influenza there is little or no delirium or coma ; tympanites is rarely seen except in children ; there is no pain on pressure localised in the ileo-cæcal fossa ; the temperature does not continue to rise after the fourth day, nor exhibit the regular diurnal rise and fall characteristic of typhoid, but attains its maximum within a day or two, with slight and irregular remissions, and there is an absence of the "facies hippocratica." By the fifth day the temperature has already begun to fall, and, as a rule, in a day or two falls rapidly and continuously to a degree or two below normal. With this fall the pulse also decreases in frequency, sometimes becoming abnormally slow, irregular and weak. The cephalalgia also departs with the pyrexia, but there is often left in its place for a week or more a great oppression and weight, or a feeling of vacuity in the head, a symptom with which persist both the anorexia and coating on the tongue. The latter cleans but slowly, and from the tip and edges, its dorsum and base continuing furred for two weeks or longer, and with the want of desire for food is linked a difficulty in its digestion, shown by irregularity in the action, flatulence, and tormina of the bowels.

The disease has, as usual, been followed by mental hebetude and depression in many, and great muscular debility in all cases, recovery from which is slow, leaving the subject open to attack from other diseases, particularly to those of predisposition. Its sequelæ are therefore numerous, the commonest being in the gastro-enteric type, atonic dyspepsia, and a slight dry cough, due probably to peripheral irritation of the gastric vagus, since it disappears with a restoration of the gastric function. The diagnosis of gastric influenza is chiefly, in this country, from the exanthemata and from enteric fever, but also, and especially in tropical or subtropical countries, from dengue, and the severer forms of malarial fevers, as I have experienced.

The main indications in the treatment of influenza are : (1) to economise vitality during its course by absolute rest in a horisontal position in bed, and exhibition of alcohol ; and (2) to support it by judicious administration of easily absorbed nourishment. This treatment is necessary even in persons of robust constitution and of sound hearts, for there is much loss of vitality due to an attack, the temperature falling considerably (96° F.) and often remaining for weeks below normal, whilst the pulse also falls in tension, and in rate sometimes as low as forty beats per minute, conditions under which syncope is not uncommon on resuming an erect position.

The use of alcohol and of strychnine is therefore necessary, and the food should be liquid, transfusible, and also in severe cases predigested ; a mixture of equal parts of boiled cow's milk and soda water, with the addition of sufficient alcohol, administered often, being the least irritating, most sustaining, and therefore the best possible diet, especially for the first week in gastro-enteric cases where the production of proteolytic and amylolytic ferments must be considerably disorganised ; animal extracts should not be administered until the tongue is fairly clean and the temperature has fallen to normal.

With regard to drugs, quinine in a crude form has of old been a favourite in this disease, and, during the febrile stage, in conjunction with salicylic acid, given often in small (G 1) doses, I have found it useful in lessening heat production and tissue change, and in relieving headache and neuralgia, and especially useful for the subjects of malaria, rheumatism and gout. After the first week there may be substituted for this a mixture of tincture of bark, nitro-hydrochloric acid, tincture of rhubarb, and strychnine ; and finally, when the appetite is established, the administration during some weeks of arsenic, or of the compound syrup of the phosphites, for debility, always lingering, and sometimes extreme, that follows an attack of epidemic influenza. —*Practitioner*, *August*, 1899.

## 10.—TUBERCULOSIS.

[The following is taken from a Report of the Berlin Tuberculosis Congress, 1899 :]

THE SPREAD OF TUBERCULOSIS. — Section I. met under the presidency of Dr. Köhler, chief officer of the Sanitary Department, and Dr. Krieger, of Strassburg. Dr. Köhler himself opened the proceedings with an address upon the spread of the disease. He pointed out that pulmonary tuberculosis was least prevalent in Great Britain, Belgium, and Italy, and most prevalent in Hungary, Austria, and Russia. In Germany, which occupied a middle place, there was an average yearly death rate of 2·95 per 1,000. Men are more frequently affected than women, and the greatest number of deaths occur between the ages of 20 and 30. This age incidence of tuberculosis during the active period of life is of great importance, as it diminishes the total earning power of the community. The dangers of the disease are very real, yet the prospects of successfully combating it are hopeful.

Dr. Krieger then dealt with the relations between the external conditions of life, and the spread of tuberculosis. He observed that the full significance of hygienic factors were not yet fully appreciated. The differences in the morbidity of tuberculosis as it affects the well-to-do and the poor, lie in the fact that the former actually do in their homes, what the Sanatoria set themselves to carry out. Certain occupations increase the risk of tuberculosis, such, for instance, as (1) those which bring with them an increased chance of infection, as in nursing the sick, (2) those which predispose to catarrh of the bronchial mucous membranes, (3) those which owing to the conditions of employment impede the movements of the lungs, and (4) those which entail a sedentary life.

Dr. Gebhardt, of Lübeck, addressed himself to the prevalence of the disease in the assured. He mentioned that of 10,000, with an income of over 2,000 M, 15 died of tuberculosis, whereas, of 10,000 with an income of less than 2,000 M, 40 died. The latter includes workmen who are bound to insure. Insurance companies have, therefore, a practical interest in the prevention of tuberculosis.

In discussing tuberculosis in the army, Dr. Schjerning said that generally speaking, the greater prevalence of phthisis in an army corps really corresponded with a greater prevalence of the disease in the district in which it was stationed. Careful recruiting, hygienic measures, and medical treatment were of first importance in the war against tuberculosis. The death rate in the army had decreased from ·63 to ·24 per 10,000, but this is largely due to the early recognition of the disease, and the discharge of the phthisical soldier. The disease falls more heavily on those in the army who work indoors, than on those who are out in the open air.

Professor Bollinger, the well-known Munich authority, gave an address upon tuberculosis in animals, and its relation to tuberculosis in man. One interesting fact, specially emphasised by the author, was the occurrence of tuberculosis in pigs. Swine tuberculosis bears some resemblances to the disease as seen in children. In speaking of the great danger in the consumption of tuberculous milk, Bollinger pointed out that the frequency of swine tuberculosis was a measure of the danger from milk, as pigs were chiefly infected through tuberculous milk.

In the discussion which followed these addresses, Dr. Kuthy (Buda-Pest) said that 60,000 people died yearly in Hungary of tuberculosis. Dr. Schmidt (Berne) reported that the death rate from phthisis had steadily diminished in Switzerland during the last 20 years. It was most prevalent in the towns, less so in the country, and least of all in the mountain regions. Dr. Brauer (Heidelberg) discussed the high mortality from tuberculosis in some tobacco works, due to the dusty atmosphere. Dr. Meyer referred to the mortality of phthisis in printing establishments in Berlin, and Drs. Strattmann and Moritz each discussed the occurrence of phthisis among steel workers. Dr. Strattmann made some important recommendations upon the subject. Dr. Friedlander (Dantzig), and Dr. Federath (Brilon), each commented on the occurrence of phthisis in their respective districts.

ETIOLOGY.—The second section of the congress was presided over by Prof. B. Fraenkel, and also by Prof. Flügge, of Breslau, who took the place of Prof. Koch, who is still investigating malaria in Italy. Prof. Flügge began by again emphasising the fact that the tubercle bacillus was the only real cause of tuberculous lesions. The reason that the tubercle bacillus was not always found in the sputum was owing to its rapid death outside the body. Acid resisting bacilli, resembling tubercle bacilli, were occasionally found in non-tuberculous organs, yet these could also be distinguished from the genuine tubercle bacillus. The tubercle bacillus was an obligate parasite which could be cultivated outside the body, but sooner or later it lost its virulence.

The address of the section, and perhaps of the congress, was that given by Prof. C. Fraenkel (Halle), who held his audience almost spell bound by his vigour and fluency of speech. Every individual and every animal in whose secretions or excretions tubercle bacilli are present, are possible sources of infection, but unnecessary fear was not warranted, as the diseased are only a source of danger to the healthy when the tuberculous lesions are, so to speak, in open communication with the outside world. The relatively small susceptibility of the human subject to tuberculosis further reduces the chances of his contracting the disease. The breath of phthisical patients at rest does not contain tubercle bacilli. When the contents of phthisical cavities are coughed out, the tubercle bacillus may exist in the finest droplets so expelled. The disease spreads among those who live, work, and sleep in closed spaces badly cleaned and badly ventilated. Tubercle bacilli may penetrate by the skin, mucous membranes, or lungs, but the last-named is by far the most frequent channel of infection. A long continued contact with the tuberculous is necessary to convey the infection. Fraenkel does not accept Cornet's views of the ubiquity of the tubercle bacillus.

To Professor Pfeiffer, of Berlin, fell the task of dealing with mixed infection in phthisis. This secondary infection is mostly brought about by the streptococcus. Phthisis rarely lasts long without this secondary infection, and fever is mostly due to it. A phthisical patient, the subject of a mixed infection, is a source of danger to other phthisical patients. Thus in an institution the two classes of patients should, as far as possible, be separated from each other.

Prof. Loeffler, of Greifswald, dealt with heredity, predisposition and immunity. He pointed out that congenital tuberculosis occurs so rarely that it may very properly be neglected, and that there is no certain evidence of a congenital or inherited predisposition. In all cases of congenital tuberculosis a generalised tuberculosis and tuberculous disease of the generative organs has been found in the mother, whereas tuberculosis in the father plays no part in it. It follows from these considerations that the tubercle bacillus must be combated wherever it is found.

In the discussion Prof. Birch-Hirschfeld (Breslau) described the earliest lesions of pulmonary tuberculosis as being in the bronchi of the 5th to 2nd degree, and, therefore, the obvious result of inhalation. This view was borne out by some beautiful illustrations. Prof. Courmont, of Lyons, showed some extremely interesting specimens of the agglutination of tubercle bacilli. According to his experience this test was of marked value in latent tuberculosis. Dr. Hess, of Dresden, spoke of a new method of cultivating the tubercle bacillus. He uses an agar medium with the addition of nutrient Hyden—a soluble albumen, intermediate between coagulated albumen and somatose. The tubercle bacillus, according to the author, grows on this medium two to three times more quickly than on the other media in ordinary use. Tubercle bacilli may be thus more readily cultivated from the sputum. M. Landouzy (Paris) also read a paper on "Les terrains et la tuberculose," and on a method of cultivating the tubercle bacillus employed by M. Cornil. Dr. Max Wolff related an experimental study to show the great rarity of congenital tuberculosis. Prof. Courmont also described two cases of phthisis in which the infection was not due to the typical tubercle bacillus.—*From Dr. Trevelyan's Report in the Medical Chronicle, June,* 1899.

## 11.—SERUM TREATMENT OF STREPTOCOCCUS INFECTIONS.

By Hermann M. Biggs, M.D., of New York.

[The following is from Dr. Biggs' paper on Serum Treatment.]

Infections due to the streptococcus have long been the subject of experimental investigations, and many bacteriologists have endeavoured to produce a curative serum for their treatment. The difficulties in the way of success are numerous and have thus far been only to a limited extent overcome. It has been shown by many experimentors that it is possible to immunise animals by the inoculation of rapidly increasing doses of living and virulent streptococcus cultures, so that their serum finally possesses the power to protect rabbits under special conditions against infection from many times the fatal dose of the special streptococcus used for the inoculations. The protective power of this serum is specific. It does not exist in normal serum or in the serum of animals immunised against any other organism. Unfortunately, however, this serum more rapidly loses this characteristic power than tetanus or diphtheria antitoxic serum, and often is practically inoperative six weeks after its withdrawal. It has been further shown that this serum does not necessarily confer immunity to any other streptococcus than the special one which has been employed in the original inoculations. It may be almost powerless against some pathogenic streptococci, while it is strongly protective against others. Like other antitoxic serums, it produces its most marked effects when introduced before the inoculation of the streptococcus cultures. If introduced at the same time as the culture it is more active when injected in the same area with the cultures than when introduced on the opposite side of the body of the animal. A series of experimental investigations on the production of this serum has been carried on in the laboratories of the Department of Health for more than three years, and the conclusions which have been reached by other experimentors have been fully verified. The results obtained from the practical use of antistreptococcus serum in septic infections in the human being have been of the most conflicting nature. Some observers have reported excellent results in a number of cases, while many others have found the serum almost valueless. The practical results are fully in accord with the conclusions deduced from the experimental investigations. Undoubtedly in some instances the serum has proved of value when used in the human being. These were cases in which the serum employed did exercise a protective influence against the special organism producing the infection, and in which the infection was probably not of a very intense nature and a general streptococcus septicæmia did not exist.

In the majority of instances in which it has been used clinically, it probably has not been of any value. This result should be expected for a number of reasons. In the first place many of the preparations of serum had undoubtedly lost such power as they may have originally possessed before they were used for the treatment of human beings; second, the protective power originally was not sufficient in the doses in which it was employed to have been of much value even if introduced when fresh ; third, there is little evidence to show that this serum is of much value when a severe general septicæmic condition exists ; fourth, in many instances the infection has been due to some pathogenic streptococcus different from that employed in the inoculation of animals from which the serum was obtained and against which the serum would have no power ; fifth, many of the cases in which it has been employed were not cases of streptococcus infection at all, but were infections due to entirely different organisms, as the staphylococcus, colon bacillus, pneumococcus, &c. It may, therefore, be assumed, from what has been said, that at present the practical value of this serum is limited.—*Medical News, July* 29, 1899.

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## 12.—RHEUMATIC FEVER WITHOUT ARTHRITIS.

By C. O. Hawthorne, M.D.,

Medical Superintendent of the Medical Graduates' College and Polyclinic.

[The following is taken from Dr. Hawthorne's paper :]

Mary C., aged eighteen, was sent into hospital on October 1st, 1897. She had for several days been complaining of headache and aching in the back, with thirst and want of appetite. On admission she said that her throat was sore, and that her back and legs ached; the temperature was 103·6°. Examination showed slight congestion of the fauces, and some tenderness on pressure over the knees and shins, but no redness or swelling of the joints, no skin eruption, no evidence of disease in the thoracic or abdominal viscera, and no history or existence of vaginal discharge. Patient was a well-nourished girl with little or no evidence of anæmia, and the fundus oculi on each side was normal. The febrile temperatures continued until October 8th, and during the whole of this time she always said she was "quite well," though under pressure she admitted some aching in her legs; the skin was always more or less moist, but there was no free sweating. The tongue remained clean; the bowels were constipated; and neither in the character of the stools nor from any other source was there anything to suggest the existence of enteric fever. On October 9th the temperature fell to subnormal, and the case pursued an uneventful course until the 23rd. On that day the patient complained of acute pain in the right knee, and the joint became distended with fluid. Under rest this condition promptly subsided, and patient left the hospital quite well.

In the study of this case it is manifest that during the febrile period the elements for the construction of a positive diagnosis did not exist. Such grounds of complaint as the patient offered were but slight, and quite out of proportion to the height of the fever. Physical examination was equally helpless to throw light on the febrile state, and it seemed probable, even for some days after the termination of the fever, that the case would have to be labelled "unexplained pyrexia," unless without a shred or fragment of positive evidence one's courage could claim a diagnosis of "abortive typhoid." The question now to be considered is whether the subsequent development of acute synovitis in the knee-joint justifies a diagnosis of rheumatic pyrexia. Certainly had the two events—the pyrexia and the synovitis—coincided in point of time, the only difficulty in naming the case one of "rheumatic fever" would have been the restriction of the inflammation to a single joint. It may be doubted whether such a restriction is a valid argument against the diagnosis of acute rheumatism, and the sudden appearance of the synovitis and its prompt and complete disappearance are exactly on the lines of "rheumatic inflammation." Besides, in the survey of the case it is necessary to include the whole of the phenomena, and though the absence of any other explanation is not a deciding argument, it may at least be urged that a diagnosis of rheumatism covers the entire ground—the pyrexia, the early symptoms, and the later synovitis. And support for this view may be claimed from not unimportant sources. For though most modern authors, in dealing with the subject, are content with the general statement that the pyrexia in acute rheumatism in the great majority of cases corresponds to the extent and severity of the synovitis, earlier writers of recognised authority, whilst adhering to the truth of the rule, were much more explicit that exceptions occurred, and that it was quite possible to have "rheumatic fever without arthritis." Of course the difficulty of establishing the last proposition arises from the dependence of the recognition of rheumatism upon certain local events, and in the case related above, had it not been for the development of synovitis in one of the joints, the case would have been free from individual features which could be claimed as sanctions for a diagnosis of "rheumatic pyrexia." It is the development of this local condition at a late date which makes the record of the case peculiarly significant as an illustration of the possibility of a complete divorce between the constitutional disturbance and local phenomena of acute rheumatism. Graves seems to have been the first authority to announce this doctrine. He observed, in several instances, that patients, who at an earlier date had suffered from articular rheumatism, developed "attacks of fever which in intensity, duration, and every other particular, were identical with their former fevers, save and except that from beginning to end not a single joint was inflamed." On the basis of this experience he maintains the proposition that "as arthritis may exist without rheumatic fever, so rheumatic fever may exist without arthritis. Todd also deals with this question, and referring to the cases related by Graves, says: "I have not met with such cases, but I have frequently been struck with the disproportion of the intensity of the articular affection to that of the fever, the former being trifling in amount, whilst the latter was of great intensity." He holds to the view that the articular swellings and the febrile movement are the result of a common cause, viz., the presence in the blood of a particular morbid element. Sir Thomas Watson was of opinion that rheumatic fever "may sometimes run its whole course without any manifest affection of the joints." Taylor, in a most interesting paper published in 1845, in arguing from cases quoted in detail for the occurrence of rheumatic pericarditis without inflammation of the joints, remarks, "This opinion implies the possibility of rheumatic fever without arthritis, and is supported by the facts which support the latter opinion." Fuller also upholds this view; "in certain instances," he says, "it (the rheumatic poison) may excite the peculiar train of symptoms whereby rheumatic fever is characterised without producing from first to last the slightest concurrent local inflammation, whether of the joints, or of the heart, or of any other organ." Charcot, too, though less confident on the point, concludes that on the whole experience seems to justify the view of Graves, Todd, and Fuller, that the fever in rheumatism is primary and not secondary. And more recently Gee has written on the same subject and described cases which support the same doctrine.—*The Practitioner*, *September*, 1899.

## 13.—THE RELATION OF TONSILLITIS TO RHEUMATISM AND CHOREA.

By Bertram Abrahams, M.B., B.Sc., M.R.C.P.,

Medical Registrar to the Westminster Hospital and Physician to St. George's and St. James's Dispensary, London, Eng.

[The following is taken from Dr. Abraham's paper :]

The last few years have shed a flood of light on the subject of rheumatism. We know, for instance, that it occurs frequently —far too frequently—in children, and that in them it assumes what I may call a peculiarly disjointed form. The joint affections do not predominate as in adults; they are rather subsidiary phenomena, manifested only by a little discomfort in the buttoning of boots and so forth. On the other hand, the first manifestation of the rheumatic cycle may be an attack of chorea, or again a rheumatic endocarditis may develop insidiously and apparently primarily, escaping detection perhaps till a valve is irreparably damaged. Another, and I believe a very important way in which the rheumatic process may first manifest itself, is in the form of tonsillitis.

A careful distinction must be drawn between the throat affections commonly associated with rheumatism. In a large number of cases an attack of acute rheumatism is ushered in by a transient soreness of the throat, which was admirably described by Trousseau ; this passes off within a day or two, often giving place to wryneck. For this condition I have proposed the name of faucial erythema ; it is merely a febrile manifestation, an initial symptom, and may be looked upon as a feeble imitation of the much graver sore-throat of an allied disease, scarlet-fever. It is much more common in adults than in children, for in the latter acute rheumatism is a comparatively rare disease. The other rheumatic throat affection is, I believe, of far graver import. It attacks the tonsils themselves, assuming usually the follicular or lacunar form in children, but not infrequently giving rise to quinsy in adults. It occurs at a variable period before the other rheumatic manifestations, and will presently adduce evidence to show that it may, in some instances at least, be their cause. It is certainly very common ; I have investigated some two hundred and fifty cases of chorea and ninety of heart disease in children, and found rheumatic tonsillitis in more than half of the former and just two-thirds of the latter. These observations complement an admirable paper by Dr. Haig-Brown, who found that two-thirds of his cases of tonsillitis had a family or personal history of rheumatism, and that eleven consecutive cases of rheumatic fever had had sore-throats within the six weeks preceding the appearance of the joint-pains and fever. Tonsillitis may occur at any point of the rheumatic cycle ; thus I have recorded cases of endocarditis following non-scarlatinal tonsillitis without the intervention of arthritis or chorea, of tonsillitis immediately followed by a first attack of chorea, and of repeated attacks of chorea each preceded by tonsillitis.

In the exudation of the rheumatic sore-throat, I have been able to demonstrate the practically constant occurrence of staphylo and streptococci, and the same germs may be found in such cases in the blood and the urine. The presence of the same organisms in these diverse situations—and they are known to exist in the joint-effusions—seems to me to point not only to their being the actual cause of the disease, but to the strong probability that they may enter the system by way of the tonsils. These organs are known to be channels of infection in tuberculosis, and I am convinced that they constitute one joint in our armour which may allow the entrance of the rheumatic virus.

Finally, a word as to treatment. I am compelled to reckon myself with those who consider that the salicylates, while affording an invaluable symptomatic remedy in rheumatism, exert no specific influence upon the disease. This view I am enabled to corroborate from the study of rheumatic tonsillitis. For cases have been recorded in which this affection has been systematically treated with salicylates, and acute rheumatism has nevertheless supervened while the medicine was being taken. It hence becomes of importance to consider whether tonsillitis is among the rheumatic manifestations which are susceptible to salicylate treatment. Investigation of this point shows considerable personal variation; many cases are rapidly cured in this way, others appear to be uninfluenced. I myself invariably give large doses of sodium salicylate whenever I diagnose rheumatic tonsillitis; sometimes they act like a charm, but in others they appear to be useless. In the latter event I give frequent small quantities of aconite if there is much fever and discomfort, and perchloride of iron with chlorate of potash if there is prostration.—*Medical Brief*, *June*, 1899.

## 14.—ACUTE RHEUMATOID ARTHRITIS.

By R. A. Bayliss, M.R.C.S. Eng., L.R.C.P. Lond.,

Late Resident Medical Officer to the Royal Mineral Water Hospital, Bath.

The frequent occurrence of this disease at an early period of life, its rapid progress associated with increasing debility, form a striking contrast to the chronic variety, with its slow development and little if any constitutional disturbance. The large majority of cases of acute rheumatoid arthritis occur in females, though occasionally males may be affected by it. The age of the patients varies within somewhat wide limits; children of even four years of age having been seen, presenting all the typical signs of the disease, whilst, on the other hand, the onset may be delayed till the individual has reached 45 years and upwards. The cases occurring in early childhood are, as a rule, amongst girls. Generally speaking, acute rheumatoid arthritis begins in an insidious way, the fingers of one hand very frequently becoming enlarged and stiff. The patient, as a rule, takes but little notice of it until he finds his other hand affected, when the consequent loss of power prevents him from following his usual calling. The other joints soon become affected in rapid succession; the ankles, knees, wrists, and elbows being the most prominent ones disabled at first; whilst later on the hips, shoulders, and articulations of the jaw and neck are very frequently implicated. The deformity of the hands is perhaps one of the most peculiar features of the malady. The phalangeal joints are swollen in a fusiform manner, and the joint cavities often contain fluid which, by the increased tension, causes pouch-like protrusions to be formed around them. There is well-marked wasting of the muscles of the back of the hand and forearm, which in the former position produces a curious scooped-out appearance, as it were. The whole hand is, as a rule, deflected to the ulnar side, which together with the flexion of the fingers (due to the more or less unopposed action of the flexor muscles) combine to give rise to much distortion. The wrists, too, may be enlarged, and not at all unfrequently completely ankylosed. The elbows, shoulders, and ankles are also in their turn affected. The knees are most commonly implicated, and often present a considerable amount of swelling, which sometimes is due to the presence of free fluid in the joint, though more frequently to thickening of the synovial membrane and peri-articular tissues. The muscles of the calf and other parts of the lower limbs are atrophied to a degree which is sometimes almost incredible, and the feet may be flat, from the giving way of the various structures supporting their arches. Profuse sweating of the hands and feet may be observed now and again, whilst occasionally the fingers have a bluish appearance, and are cold and clammy to the touch. Pigmentary deposits are present sometimes on the back of the hands and forearms, but their connection with the disease is somewhat problematical. In a number of cases the glands in the neck, axillæ, and groins are enlarged, hard, and tender, though the spleen is unaffected, as far as can be ascertained by palpation and percussion. The gastro-intestinal tract is as a rule more or less deranged ; dyspeptic symptoms, with furred tongue and troublesome constipation, being commonly met with in the course of the malady. The temperature in quite a large majority of the worst cases is of the hectic type, reaching from 100° to 102°, or more at night. The progress of acute rheumatoid arthritis is interesting, though, as most of the hospital patients after being discharged drift out of sight, their ultimate fate cannot be definitely ascertained. It is certain, however, that under suitable treatment a fair number greatly improve, and maintain their ground for years, eventually dying of some intercurrent malady ; whilst others rapidly succumb under the influence of one or more of the many complications so apt to arise in the course of the disease.

The treatment of acute rheumatoid arthritis is not quite so hopeless as one would imagine, though, of course, an absolute cure is out of the question. A great deal, however, can be done by judicious and persevering measures to improve the condition of the sufferer. The surroundings of the patient should in every way be of the best possible kind, residence in a dry climate being an absolute *sine quâ non.* It is important, too, that the patient's clothes should be of some woollen material. The diet should be plain but nourishing, and all rich dishes or sauces must be entirely eschewed. Some stimulant, preferably whisky, may be taken with advantage, especially if it seems to improve digestion. If there is much elevation of temperature, the patient should, of course, be confined to bed, though it is desirable that he should sit up for a short time daily, as matters improve, to prevent the joints from becoming stiff. Many drugs have from time to time been brought forward as more or less efficacious in the treatment of acute rheumatoid arthritis, the chief of which are carbonate of guaiacol, salol, salophen, β-naphthol, and benzosol. I think, on the whole, guaiacol carbonate gives the best results, and it may very conveniently be combined with the saccharated carbonate of iron, where much anæmia and debility exists. Cod-liver oil, maltine, and petroleum emulsion are all exceedingly useful when there is much loss of flesh and wasting. Any irregularities of the digestive organs should be attended to, and appetite may be promoted by the administration of some dilute mineral acid along with strychnine.

The local treatment is by no means the least important. Thermal baths, which can be obtained (chiefly in this country) at Bath, Buxton, or Harrogate, or at the numerous continental spas, give great relief to the sufferer, render the joints more supple, and by promoting the action of the skin aid the elimination of the morbid products. The mineral waters may also be taken internally, producing a beneficial flushing action on the system. The adjuncts to all good bathing establishments, namely, hot and cold douches for all parts of the body, aix-massage, vapour baths, and hot-air baths, are all in their turn useful in restoring to the joints some of their lost mobility. Dry massage may with advantage be practised on the day alternate to that on which the bath is taken. Several medicaments applied locally to the joints have been tried, with a view to relieving pain, and causing, to some extent, the absorption of the adventitious tissues. Passing over the older remedies, such as glycerine and belladonna and iodine, which in their way are useful, we come to two drugs which are worth consideration, namely, guaiacol oil and salicylate of methyl. They are both used diluted with one or more parts of olive-oil, and painted on the skin over the affected joint. Gutta-percha tissue is then applied, and round this a layer of cotton-wool, the whole being held in place by a bandage. Guaiacol certainly relieves pain, reduces temperature, and under its continued application the swelling often diminishes. As a local anodyne, methyl salicylate is undoubtedly superior, though it is questionable whether its results are so far-reaching as those obtained by the use of the guaiacol. If the joint is acutely inflamed, a hot dressing of boric acid lotion, frequently applied, is very comforting to the patient. Aspiration of a joint considerably distended with fluid, pressure being applied afterwards, is sometimes a useful procedure, but extreme care should be taken to perform the operation with the strictest antiseptic precautions, otherwise mischief of a very disastrous kind may be set up.—*Edinburgh Medical Journal*, *August*, 1899.

## 15.—OSTEO-ARTHRITIS OF THE SPINE: SPONDYLITIS DEFORMANS.

By JOEL E. GOLDTHWAIT, M.D., Boston.

[The following is taken from Dr. Goldthwait's paper. The details of the cases are omitted.]

The term osteo-arthritis is used to designate the disease of the articulations which is characterised pathologically by a marked proliferation of the edges of the articular cartilage, associated with an atrophy or degeneration of the cartilage at the points of pressure, the two conditions producing an amount of impairment of function of the joint varying from the slightest inconvenience to complete anchylosis. In all about 35 cases have been reported previously, or 45 cases, including the 10 of my own. They must be distinctly differentiated from the other type of rheumatoid disease, which is chronic in character and also leads to joint anchylosis, but in which there is atrophy of all the joint structures with no tendency to nodular growth or osseous deposit, as is seen in the type of disease under consideration. Both of these diseases are usually considered together in the text-books under the head of arthritis deformans, which accounts for the variation in the clinical picture as it is presented by the various writers. In a paper published in the *British Medical Journal*, Bannantyne and Vollman have carefully described the two types, and in a paper entitled the "Treatment of Joints disabled by the so-called Rheumatoid Diseases," published by the writer in the *Boston Medical and Surgical Journal*, January 29, 1897, the two types were described and illustrated. In that paper the descriptive term "arthritis deformans" was used to designate the whole class of these so-called rheumatoid diseases. Rheumatoid arthritis was used to designate the cases in which joint inflammation and atrophy, resulting in anchylosis and marked distortion, were the chief features, while osteo-arthritis was the term used for the cases in which the nodular deposits about the articulations were the most prominent features. It is evident, in the first place, in the analysis of the cases that the disease is essentially a disease of adult life, but not necessarily a disease of old age, as is often stated. Some of the worst cases have developed in the period of late adolescence, while in very few has the process started in old age. The disease, as it is seen in old age, is not so definitely localised in the spine, but, as a rule, the other joints are also more or less involved. Another feature which is also noticeable is that there is no one cause or definitely recognised etiology to explain the onset. Gonorrhœa has been mentioned as a probable cause in a certain number of instances, but in a much larger number this is not suggested as a possibility. In the majority of cases the cause seems to be some exposure or the rapid change in temperature of the affected part. These influences are recognised and accepted as etiological factors in similar phenomena in other parts of the body, and their importance in spondylitis deformans is probably equally certain. Exposure to wet or cold, or occupations which necessitate sudden changes from heat to cold, such as "firing" or "engineering" are the causes most frequently met with. Bechterew suggests trauma and heredity as possible causes. Beucke believes the process to be due to senile and mechanical causes.

Clinically, as the disease is seen, the subjective symptoms are usually slight in comparison to the actual pathological change, and frequently there has been so little trouble with the back, and the change has taken place so gradually, that the patient is not conscious of any special limitation, the condition being discovered by accident. More often, however, there is considerable pain, which is referred to the back and which is aggravated by change of position. When quiet the pain is so much relieved that the patient frequently does not seek treatment until the disease is far advanced. If the disease is seen early, before much actual change has taken place, there is usually a definite region in the spine to which the pain is referred, and in this region the motions are restricted, at first, of course, by muscular spasm, but later by osseous change. At this time, when the process is so definitely localised, the portion of the spine affected may appear more prominent than normal, suggesting the beginning deformity of Pott's disease, and at this time a positive diagnosis may not be possible. As the anchylosis of the spine takes place the ribs almost invariably are affected, and the process may prove so extensive that all the articulations become anchylosed, and the thorax is perfectly rigid. In this case thoracic respiration is, of course, entirely lost and the breathing is done wholly by the diaphragm. Beside the pain in the back and the limitation of motion, neuralgic pains in the arms or legs, together with disturbances of sensation, numbness or hyperæsthesia, are probably the most common symptoms. These are, of course, due to pressure upon the nerve roots, and consequently are not seen until the disease is well advanced, or when the onset has been unusually rapid. Following these neuralgic pains, when the disease is well advanced, paralysis may result, the extent of which varies from complete inability to use the part to a slight inconvenience. Rarely are the two sides affected equally, or if both sides are affected the symptoms have developed at different times. This, together with the fact that the paralysis is peripheral in type, is of importance in differentiating it from Pott's paraplegia.

Occasionally, when the disease is very active, the same osseous deposit takes place in the posterior ligament (*ligamentum longitudinale posticum*), and may result in enough narrowing of the spinal canal to produce symptoms of pressure paralysis, exactly similar to that seen in connection with Pott's disease. This is not very common, but nevertheless does occur and must be borne in mind in making the diagnosis.

After the active stage of the disease has passed, with the lessened vascularity and natural shrinking of the non-osseous structures the direct pressure upon the spinal cord is usually relieved and the same may be true of the pressure upon the nerve roots. In my own experience, and so far as I can learn from the reported cases, there is no case in which the symptoms due to the direct pressure upon the cord have not been relieved. With the involvement of the nerve roots, while there has always been some improvement, in many of the cases the recovery was never complete. The deformity, which is so striking at times, has a wide range of variation. In the most extreme form the rounded back with the protruded head and the flat chest is the type usually pictured or described. It is evident, however, that the nature or extent of the deformity must vary with the seat or extent of the disease, and also with the rapidity of its development. The treatment of this disease is of more importance than is commonly supposed, and is partly medicinal and partly mechanical. As an early diagnosis is, of course, of the first importance, it is at this time, before the deformity has taken place, that the most can be accomplished. The disease is probably a trophic process, and consequently all medicines or methods of treatment which debilitate should be most carefully avoided. This naturally includes the various so-called rheumatic remedies, all of which are depressants, and also the various baths or courses of treatment which tend to lower the vitality. The general treatment should be wholly nourishing and stimulating. Extra diet, stimulating bathing, massage of the unaffected parts, electricity in a mild current, all are of value, and also the dry heat, provided it is not used so frequently as to be debilitating, relieves the pain and does much good. For medicines, iron, arsenic and strychnia are the drugs which are of the greatest value. Cod-liver oil and alcohol in medicinal doses are also useful. For mechanical treatment some form of spinal support should be used at once, partly to relieve the pain by restricting the motion, and partly to prevent the marked deformity from developing. Manipulation of the spine is naturally of little value, and probably would result in more harm than good. Attempts have been made to forcibly break up the anchylosis, but they have been followed, as would be expected, by results which were not satisfactory. — *Boston Medical and Surgical Journal, August* 10, 1899.

## 16.—A CASE TREATED WITH YELLOW-FEVER SERUM.

By Alvah H. Doty, M.D.,
Health Officer, Port of New York.

The serum used in Mr. L.'s case was produced in the laboratory of this department under the supervision of Dr. Charles B. Fitzpatrick. Of this 10 c.c., when injected into a guinea-pig ten hours before inoculation with a fatal dose of a living culture of the bacillus icteroides (Sanarelli), prevented death. However, to cure guinea-pigs inoculated with a fatal dose of the living culture, a larger dose (14 c.c.) was required. Inasmuch as Mr. L. was the first case to be treated with the serum at this station, it was decided to use the subcutaneous method. Accordingly at 11.30 p.m., July 6 (on the third day of the disease), the first injection, consisting of 25 c.c., was given in the loose cellular tissue on the right side, just above the pelvis; at 2.30 a.m., July 7, three hours afterward, a second injection of 25 c.c. was administered at the corresponding place on the left side, and at 7.20 a.m. (five hours later) a final injection of 50 c.c. was made; the latter was introduced in the vicinity of the first injection on the right side. The syringe used was similar to those employed in introducing the diphtheria antitoxin, having a capacity of 25 c.c. This was carefully sterilised by boiling. The skin at the site of the puncture was treated with an antiseptic solution, and after the withdrawal of the needle, collodion was immediately applied. The operation caused no inconvenience to the patient, and no unpleasant signs of symptoms either local or constitutional followed the use of the serum. At 11.30 a.m., on July 7, the following entry was made by the nurse on duty: "Patient brighter, headache disappeared." Eight ounces of urine are recorded on July 6. This covers a period of twelve hours or more. On the 7th, fifteen ounces are recorded; this represents the urine passed during twenty-four hours with the exception of a small amount voided during a movement of the bowels. The amount of albumin in the urine, thirty-five to forty per cent., continued until July 12, when it rapidly decreased and disappeared on July 15. The specific gravity of the urine, which at first was 1.025, gradually diminished. The urine was distinctly acid and contained numerous epithelial casts. Considerable irritability of the stomach existed, and some slight vomiting occurred during the first three days. After this there was but little trouble in this direction. The vomited matter was small in quantity, and contained mucus, &c., occasionally having a yellow tinge.

*Treatment.*—Besides the serum, no medicinal agents (excepting whisky) of any kind were employed during the course of the disease. During convalescence a tonic containing strychnine was given. From 10 to 12 ounces of warm salt water was occasionally introduced into the rectum to assist the function of the kidneys. This was retained and evidently had the desired effect. There are few diseases in which the organic degeneration is so pronounced and rapid as in yellow fever, and therefore there is no condition in which judicious nourishment and stimulation are more imperatively called for. They are, however, usually given too late to be of the greatest value. To begin the use of stimulants early in the disease is to offer prompt support to the heart before it has become too exhausted to respond. The value of the rectum as a means of introducing nourishment and stimulants does not seem to be generally appreciated. The use of the serum, if fully active, would not by any means do away with the necessity for giving careful attention to the nourishment and stimulation of the patient. The therapeutic action of the serum does not repair the tissue or take the place of nourishment, and at most it only counteracts the infection due to the specific organism, and in this manner diminishes the mortality from the disease.

In Mr. L.'s case, during the first three or four days, fresh milk, peptonised at the hospital, was given in amounts ranging from a tablespoonful to two ounces every two hours. A teaspoonful of whisky was occasionally added. This was suspended when the stomach exhibited signs of irritation. During this period, however (three or four days), six ounces of peptonised milk with from one-half to one ounce of whisky was given by the rectum three times during each twenty-four hours. After the fourth day at the hospital the nourishment was rapidly increased. In addition small quantities of one of the bottled waters (still) were frequently given. Champagne and sparkling waters were not well borne by the stomach. I am well aware that the value of the serum in the treatment of yellow fever cannot be definitely decided, until it has been employed in the treatment of a large number of cases. Therefore in this instance it is consistent only to present the facts in connection with the case. The patient recovered from the disease; whereas cases of yellow fever brought to this station on incoming vessels, unless they are of a mild character, usually terminate fatally. The nervous symptoms which were apparent in this case practically terminated on July 7, and did not return. The record of the pulse shows no evidence of heart failure, or any other unfavourable signs. The amount of urine passed after July 6 was rather large, considering the fact that the kidneys were seriously affected, as shown by the amount of albumin present. The favourable conditions and result which I have just enumerated are what might be expected to follow the successful use of the serum, which is believed to limit the destructive action of the specific organism in the system. However, the age of the patient (25 years), an apparently good constitution, the early administration of nourishment and stimulants, with the use of saline solution by the rectum, and the most careful watching and nursing, may have contributed largely to the satisfactory termination of the case. The importance of a thorough investigation as to the value of the serum treatment in yellow fever cannot be over-estimated. The good results already obtained in diphtheria justify the belief that this method of treatment will sooner or later prove to be of great value in yellow fever.—*From Dr. Doty's paper in the Medical Record, August* 26, 1899.

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## 17.—MALARIA AND THE POSSIBILITY OF ITS EXTIRPATION.

Malaria is admitted on all hands to be the most widespread disease that attacks mankind; it is also probably the most fatal to life. In tropical and sub-tropical countries there is certainly no malady that claims so large a number of victims. For example, in Italy the statement was recently made upon unimpeachable authority, that "malaria" keeps nearly five million acres of ground from cultivation; it affects sixty-three provinces, and every year poisons about two million inhabitants, causing the death of fifteen thousand human beings. In Africa, in Asia, in South America—indeed in every part of the globe situated in the tropics, the effect of its ravages is almost beyond computation. However, these facts are too well known to need further discussion, and the thought that naturally arises in the mind of every intelligent person is, How is it then that science has not succeeded in devising means to check or stamp out a disease so inimical to the human race? The answer, which covers nearly the whole ground, is the simple one that until recently the cause of malaria has been obscure. Many theories have been set forth in explanation, the majority of which were more or less visionary and rested on no firm foundation, while the one that appears now to be most worthy of belief required further proof before being generally accepted.

Of course it has long been a matter of common knowledge—at least in the greater number of cases—that in those swampy districts in which malaria had formerly prevailed, and where an efficient system of drainage had been undertaken, malaria was quickly and effectually banished; but why this should be was only surmised. The fact, too, that malaria is produced by certain minute parasites in the blood has been for some considerable time well known to scientific men; whence they came, however, and their mode of entrance remained a mystery. To the Frenchman, Laveran, the credit is usually given of first publishing the theory that the mosquito is responsible for the introduction of the parasite into the human system. Dr. Patrick Manson followed this line of research and made public his opinions on the subject, which Major Ronald Ross has so far confirmed by experiments in India extending over a lengthy period. Such eminent authorities as Bignami, Grassi, and Bastianelli have declared themselves convinced that these views are in the main correct, and that in the bite of some species of the mosquito the solution of the malaria problem must be looked for. So much has already been written in regard to Manson's theory, and concerning the painstaking and acute investigations of Ross tending to prove the same, that it would be superfluous to touch further on that part of the question. Suffice it, then, to say that most distinguished scientific men are of one mind as to the mosquito being at any rate an important if not the chief factor in the dissemination of malaria. Major Ross, regarding this point as practically proven, suggests, in a lecture delivered by him to the students of the Liverpool School of Tropical Medicine, a method of extirpating malaria. He is of the opinion that this object will be attained if the mosquitoes which produce the disease can be exterminated. The fact must ever be borne in mind that no claim is made that every mosquito is capable of conveying the malarial infection. This would preclude all possibility of extirpating them. According to Grassi there are three species, all belonging to the genus Anopheles, which are in this way a menace to the health of man, while in India Ross demonstrated that one species of the same genus was able to convey the malarial germs. This species makes its home in and around isolated natural pools and puddles, which are used by them as breeding-places. Again, it is not proposed to attempt to obliterate the adult parasite-bearing mosquito, another impossible task. The end in view would probably be gained by finding out where they breed and by destroying the larvæ. The larvæ of the dangerous mosquito can be distinguished by the fact that they float flat on the surface of the water, and the adults themselves are remarkable in that, unlike the members of the commoner species, their wings are spotted. An infallible sign in the detection of their breeding-place is, says Ross, their invariable habit of congregating in large numbers in its near locality. When the breeding-place is discovered, the plan of campaign suggested by Ross is a wholesale "slaughter of the innocents" before they have reached the winged stage in their development, and the method proposed is to empty or drain the pieces of water which serve as their nurseries. Provided that the breeding pool is located correctly, this proceeding, although at first sight appearing to present almost insurmountable difficulties, will when regarded more closely be seen to be eminently feasible. The pieces of water selected by the dangerous mosquito as a breeding-place are always so circumscribed in area that they can be emptied or drained easily. Small collections of water are chosen for the reason that they contain no minnows (which look upon the embryo mosquito as a dainty tid-bit and devour it with gusto). —*From leading article in Medical Record, August* 19, 1899.

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## 18.—DIABETES AND GLYCOSURIA IN CHILDHOOD.

Although diabetes mellitus is not a disease of frequent occurrence in early life, the cases recorded by living physicians are sufficiently numerous to make it remarkable that it was not more generally recognised in former days, for in the second stage the symptoms are well marked, and indeed quite characteristic. It is, however, only since the seventies that the question has received adequate attention, and full reports of over 500 cases have been collected from all quarters and published by Saundby, Külz, Stern, Wegeli, and Bogoras, Dr. Bogoras having given in the last issue of the *Archiv für Kinderheilkunde* an able digest of the whole subject, with clinica records of cases that have come under the notice of himself, colleagues, and friends, elaborate tables, sixteen in number, of the chemical constitution of the diet and of the urine, and complete bibliographies and references to published cases. Glycosuria is, however, but a symptom, and it is certain that not only is sugar excreted, especially in childhood, under many conditions of a transient character, involving little, if any, danger to life, and therefore to be distinguished from the graver, indeed, sooner or later, inevitably fatal disease that goes by the name of diabetes; but that this, or rather these, are of diverse natures, being dependent on or induced by morbid changes or functional diseases of the liver, pancreas, kidney, or nerve centres. The essential fact is that, however brought about, glycosuria, if persistent, is fatal; if not so, is not. The former class of cases are those conveniently distinguished as diabetes. True diabetes is not often met with in the first year of life, and the incidence increases rapidly with the age. This is well seen in the following table :—

| | Under 1 year. | 1—5 years. | 5—10 years. | 10—15 years. | Boys. | Girls. |
|---|---|---|---|---|---|---|
| Saundby | 2 | 23 | 48 | 81 | 80 | 79 |
| Külz | 1 | 13 | 24 | 49 | 38 | 46 |
| Stern | 6 | 23 | 20 | 41 | 31 | 47 |
| Wegeli | 4 | 28 | 35 | 63 | 58 | 61 |
| | 13 | 92 | 147 | 234 | 207 | 233 |

Still, many cases among infants at the breast or bottle-fed may be overlooked, as that reported by Dufloque and Danchez of an infant dying after rapid wasting, in a coma so characteristic of uræmia or diabetes, that, though neither had been suspected during life, the urine was examined after death, and 22 grams of sugar were obtained from its napkins. Girls seem more liable than boys. Heredity appears to be a factor in about 20 per cent. of the cases, as it is among adults to a degree variously estimated—von Noorden putting it as high as 17 per cent. Injuries and accidents—especially blows on the head—and infectious diseases, as measles, diphtheria, typhoid, and of late years, influenza, appear as exciting causes, with possibly, if they be not merely accidental antecedents, improper food, chills, &c. Baginsky, however, holds congenital syphilis to be a strongly predisposing factor.

Bearing in mind that milk sugar may be passed in the urine of sucking infants, that all children are liable to temporary glycosuria, and that there are other reducing agents than diabetic sugar, and the fact that true and fatal diabetes occurs in a certain number of cases greater than was formerly, perhaps than is even now, imagined, one should never neglect in any obscure case, or after accidents and infectious diseases, to test the urine for sugar; and, as von Noorden insists, this should be done with the evening rather than the morning's urine, since for some time it may be present in the former only. Bogoras recommends as easier, and occupying less time than the usual procedure, the following method:—Filter 5 ccms. of the urine into a test tube, add a little Liq. Potassæ, and after it has stood for some time, let fall a few drops of a 5 per cent. solution of copper sulphate on the liquid, taking care not to let it touch the side of the glass. If no sugar be present, the drops remain green and undissolved, but if there be, the copper solution diffuses itself, and gradually the whole becomes blue. This is, of course, only meant for a preliminary test, but is very convenient in a large ward, any samples that react being examined afterwards by more accurate and quantitative tests.

The course of the disease is very characteristic and constant. First a latent stage and then the acute or final. In the first, which may last for weeks or months, there are usually no symptoms beyond the glycosuria. The child does not complain; there is perhaps a slight diuresis, but no unusual thirst, the only evidence of the disease, except the glycosuria, being a very gradual loss of flesh, despite the good appetite and normal digestion. In this period limitation or deprivation of carbohydrates is followed by a temporary reduction or even disappearance of the sugar, and a visible improvement in the general condition. Yet sooner or later the sugar reappears and the child's health begins to fail. Aceton and acetic acid, however, are not met with in this stage, and the disease is apparently so mild as not to give rise to alarm. But after a time following on an accident or some inter-current illness, or without any recognisable cause, the whole aspect changes suddenly or gradually, but surely, and the final stage sets in.

The symptoms of this stage are extreme emaciation; skin dry and harsh, often scurfy; surface temperature sub-normal, itching; erythema, eczema or boils often present, as are swelling of the glands and slight œdema; there is a distinctly fruity odour in the breath; pulse slow, region of liver often sensitive, and the liver itself enlarged and indurated; saliva reacts acid, there is constipation, or sometimes diarrhœa; vomiting, nocturnal and diurnal incontinence of urine, and in girls perhaps a vaginal discharge; the child often complains of abdominal pains, and perhaps of cramp in the calves. Distressing thirst disturbs the sleep, and there is often increased sensation of hunger. The secretion of urine is enormous; the maximum recorded (MacIlvain) was 13,500 ccms., but the greatest amount observed by Bogoras was 6,600—occasionally it is deficient at times. The elimination of sugar usually, though not invariably, follows the volume of the urine. The maximum on record (Heubner) was 11·3 per cent.; the highest by Bogoras was 8·6 per cent., the Sp. G., which corresponds with the excretion of sugar, ranges from 1,020-1,045, the largest actual quanity of sugar in Bogoras' cases was 264·7 grams. The urine is mostly free from albumen, but is rich in aceton and acetic acid, and the diazo reaction is very well marked. The child is fretful and capricious. The second stage does not last long, usually for weeks only, more rarely months, and death is in 30-40 per cent. preceded by coma. The complications met with in the adult are not seen in children. Bogoras gives the following table of the duration of the cases collected or observed by him, classified according to age :—

| Duration of illness. | Ages of the children. | | | | Total for each duration. |
|---|---|---|---|---|---|
| | Under 1 year. | 1—5 years. | 5—10 years. | 10—15 years. | |
| Under 1 month | 1 | 13 | 5 | 18 | 37 |
| ,, 6 months | 4 | 15 | 14 | 20 | 53 |
| ,, 1 year | 1 | 2 | 7 | 9 | 19 |
| ,, 2 years | — | 1 | 6 | 21 | 28 |
| Three years and over | — | 1 | 3 | 25 | 29 |

Among symptoms of ill omen are rapid emaciation, acetonuria, and the characteristic thick short cylinders that make their appearance in the urine before and during the advent of coma. The changes in the organs found after death are surprisingly few, and for the most part of a secondary character. We may therefore consider the distinctive features of juvenile diabetes contrasted with that of adults to be: (1) The great frequency of hereditary predisposition; (2) the characteristic course of the disease; (3) the almost constantly early fatal termination; (4) the constantly negative post-mortem appearances; (5) the absence of complications.—*From a leading article in the British Physician, October* 16, 1899.

## 19.—MYXŒDEMA TREATED WITH "COLLOID" MATERIAL.

By Robert J. M. Buchanan, M.D. (Vict.), M.R.C.P. (Lond.),

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The following case may be of interest, having been treated with "colloid" material from the thyroid gland prepared according to Dr. R. Hutchison's formula. For a full account of the chemistry and preparation, *vide Brit. Med. Journ.*, March 21, 1896; *Brit. Med. Journ.*, January 23, 1897; *Jour. Physiol.*, vol. xx. p. 474; *Brit. Med. Journ.*, February 17, 1897. The material used was Messrs. Oppenheimer's preparation, put up in "palatinoid" form, each palatinoid being equivalent to 5 grs. of the fresh gland.

*Notes.*—J. F., aged 54 years, on January 7, 1898, when first seen by me, was complaining of weakness, lassitude, pains in the limbs, uncontrollable sleepiness, and loss of memory. There was no family history relating to any affection of the thyroid gland. His only illness had been due to a carbuncle in 1886, followed by an abscess in the left side of the neck. There was no history of venereal disease. His habits had always been temperate. As a young man he was thin. He had noticed a gradual increase in body-weight during the previous six years, with a definite increase of 21 lbs. during the last two years. During the latter period of time also his hair, which had been abundant, had gradually thinned, and almost completely fallen off, together with his eyebrows and eyelashes, and to a certain extent his beard and moustache; such hair as still remained had turned almost white, brittle, and void of lustre. From a tenor, his voice had changed during the previous eighteen months, and had become very rough and deep in tone. His speech had become very slow and laboured. His face and body generally had become puffy and swollen, his lips thickened, and the facial lines marked by translucent folds. Lachrymation, and particularly salivation, had become profuse, little or no saliva could be retained, and it was with difficulty swallowed. His hands and feet had become enlarged. His collar had to be increased from size 15 to 17, and his boots from size 7 to 9. During these two years he had suffered from increasing pains in the hips and back, great lassitude and weakness, with feelings that his legs were a "dead weight"; he had great difficulty in mounting stairs. Five years previously he could walk as many miles with comfort, but recently has had to rest very often, even during a short walk of about half a mile. His general movements had become laboured and slow, and he had found great difficulty in performing fine movements with his fingers, and stated that his "fingers" had "become all thumbs." Without going into too much detail, his symptoms on examination were characteristic of myxœdema, the principal of which were as follows:—The skin was almost like lizard skin, dry and fissured, with complete absence of sweating, waxy-looking face, with pink blush on each cheek. Hair was scanty, brittle, dry, and white on the head, absent from the eyelids and brows, also from the pubes and axillæ; the beard and moustache stubbly. Circulation was slow, the pulse ranging from 54 to 60. Hands and feet much affected by cold, the fingers turning quite white. Temperature ranged from 96·5° F. to 97° F. The nervous system exhibited tactile impressions slow, emotions absent, expression vacant and fixed; he stated that he never laughed, because his face was "too stiff"; talkativeness, marked with monotonous voice and the use of many qualifying phrases; memory poor for recent events; marked sleepiness; says that he sleeps twelve hours at night, snoring loudly, and that he falls asleep at any time if not occupied, or left alone: dreams constantly during sleep. The digestive system was normal, with the exception of almost complete anorexia. The lips, tongue, and fauces greatly swollen and thickened; salivation was extreme. Urine—Sp. gr. 1020, acid, no albumin or sugar; urea 300 grs. Thyroid—Owing to the myxœdema, no reliable examination could be made.

On January 25, 1898, he commenced treatment with "colloid" material, taking one palatinoid at night. The dose was gradually increased to four in twenty-four hours by February 22, then reduced to two, then one in twenty-four hours by June. No symptoms of "thyroidism" arose during treatment. The result has been a rapid disappearance of all symptoms, and a return to normal health. The hair during treatment fell off to absolute baldness, followed by a thick crop of *brown* hair, which required cutting on three occasions before June. The pulse and temperature returned to normal, the skin also, with normal perspiration. Mental inactivity disappeared, infection and modulation of voice returned, all movements became easy, and walking was no trouble. The body-weight gradually sank, sleepiness disappeared, and the appetite increased almost to voracity. So distressing were the symptoms and his condition that he was unable to attend to his daily business in anything like a satisfactory manner. Since treatment he has followed his occupation with increasing pleasure and good result. At the present time, February, 1899, he remains in excellent condition, taking a daily dose of the "colloid" material, *i.e.*, one palatinoid, occasionally two. His appearance has so altered that he has repeatedly to explain to his customers that he is the same person they knew before, and that the stout old gentleman with the white hair was not his father, who had died, as many thought, of "dropsy." I append here a brief and somewhat incomplete table of the metabolic changes during treatment.

| 1898. | Weight. | Urine. | Urea. | Palatinoids ordered. |
|---|---|---|---|---|
| January 25 | 14 st. 8 lbs. | 50 f. oz. | 300 grs. | 1 at night. |
| ,, 29 | .. | 54 f. oz. | 337 grs. | 2 ,, |
| February 7 | 14 st. 7 lbs. | 58 f. oz. | 580 grs. | 3 in 24 hrs. |
| , 14 | 14 st. 3 lbs. | | .. | 3 ,, |
| ,, 22 | 13 st. 13 lbs. | 70 f. oz. | 560 grs. | 4 ,, |
| March 1 | 13 st. 7 lbs. | 72 f. oz. | 468 grs. | 4 ,, |
| ,, 13 | 13 st. 1 lb. | | .. | 2 ,, |
| ,, 15 | 12 st. 11 lbs. | 54 f. oz. | 364½ grs. | 2 ,, |

From March until June I did not see him, and no record was made. The above table is necessarily incomplete, as it was found inconvenient to collect the urine during every twenty-four hours, the patient attending business during the whole period of treatment. It is interesting to note that with the loss of body-weight there was an increase in the output of urea up to a certain point; then, although the body-weight went on decreasing, the urea diminished in quantity, and at this period the maximum dose of "colloid" was being administered. At the present date the weight remains at 12 st. 7 lbs., and the patient takes one, sometimes two palatinoids per diem.—*Liverpool Medico-Chirurgical Journal*, *July*, 1899.

## 20.—INSECTS AND THE PROPAGATION OF DISEASE.

By GEORGE H. F. NUTTALL, M.D., Ph.D.,
Demonstrator of Bacteriology in the University of Cambridge.

[From Dr. Nuttall's paper.]

### THE PART OF INSECTS IN THE SPREAD OF BACTERIAL DISEASES.

1. *Passive.*—Insects may play a passive part as carriers of pathogenic organisms. *Musca domestica* and allied species are chiefly to blame in this respect. Such flies are incapable of "biting," but may, from the nature of the food which they seek, carry pathogenetic bacteria about on their bodies or within their alimentary tract, and deposit them on lesions of the mucous membranes or skin, or on food.

*Anthrax.*—Raimbert (1869) and Davaine (1870), and many others since have attributed such a part to flies in the propagation of anthrax. Celli (1888) reported experiments which showed that virulent anthrax bacilli were contained in the fæces of flies which had been fed with material containing these organisms. Proust (1894), as also Heim (1894), showed that certain beetles and their larvæ which are found on dried skins might serve to scatter the spores of anthrax. They found anthrax spores on the skins which were derived from animals dead of anthrax, as also in and on the insects named. The fæces of these insects, light and powdery, are scattered by the slightest current of air.

*Plague.*—The presence of numerous flies during plague epidemics has been recorded in some of the older chronicles. Yersin (1894), working in Hong Kong, noticed many dead flies lying about his laboratory where animals which had died of plague were examined. He inoculated an animal with the contents of one fly, and noted that it died of plague. The fly was seen to contain bacilli morphologically identical with those of plague. He came to the conclusion that flies might serve as carriers of the germs, and play a *rôle* in the propagation of the disease. He, however, went too far when he concluded from the examination of this one dead fly that all the others had died of plague, as the insects might very well have died from coming in contact with disinfectant solutions. In 1897 I made a number of experiments with flies which were fed with the organs of animals dead of plague. It was found that such flies contained virulent plague bacilli in their fæces for 48 hours and longer after they had received plague organs and then sterile food to eat. In one experiment flies were kept at a temperature of 12° to 14° C., and it was found that they were all alive at the end of eight days. In two other experiments, at 14° C., all the flies fed on plague organs were dead by the seventh or eighth day. At temperatures of 23 to 28° C. the flies infected nearly all died within three days. Though it is evident that flies die off more rapidly at high temperatures, these experiments showed that they might live a considerable time whilst carrying plague bacilli in a virulent state. The practical conclusions to which these experiments lead are too self-evident to be mentioned here. About the same time Hankin (1897), in India, found that the fæces of certain ants (*Monomorium vastator*) contained virulent bacilli after they had been fed on rats dead of plague. He expressed the belief that such ants might serve to spread the plague by gaining access to the bath-rooms in search of water and defæcating there.

*Cholera.*—Nicholas (1873) relates observations which he made in 1849 at Malta on the warship *Superb*, which led him even at that time to conclude that flies might play a very important *rôle* in the propagation of cholera. Maddox (1885) observed the cholera spirilla microscopically in the dejections of flies (*Musca vomitoria*) which he had fed with cultures of that organism. Tizzoni and Cattani (1886) isolated cholera germs from three flies caught in the cholera wards at Bologna. Sawtschenko (1892) fed flies with cultures, and found the spirilla in the fæces after two hours. Simonds (1892) found spirilla in a fly caught in the post-mortem room at Hamburg. He made a few experiments with flies which had been in contact with cholera intestines. After they had been removed the flies were rolled in gelatine tubes after intervals of four minutes to one hour and a half had elapsed. All cultures showed colonies of cholera germs. Macrae (1894), working in conjunction with Haffkine and Simpson in India, observed how flies carried cholera germs to sterilised milk, which was purposely exposed in various places in the prison where cholera prevailed. Flies were very numerous in the prison. Buchanan (1897) describes the occurrence of cholera in a prison at Burdwan at a time when flies were numerous. There had been no cholera in the prison until after a strong wind had blown over numerous flies from the direction of some huts outside where cholera prevailed. Only those prisoners who received their food at the corner of the prison nearest to the huts developed cholera. The evidence here presented seems convincing enough.

*Typhoid Fever.*—Celli (1888) reported experiments by Alessi in which that observer had isolated virulent typhoid bacilli from the excreta of flies which had been fed with cultures of that organism. Further evidence is wanting, but it seems almost certain that flies may infect themselves by feeding on typhoid excreta, and then transport the germs of the disease to food which is left exposed.

*Other Diseases.*—Similarly flies may act as passive carriers of infective agents in framboesia, transferring the specific agent from diseased to healthy persons, and depositing them on cutaneous lesions. An important part has long been attributed to flies in Egyptian ophthalmia, and it seems certain that *Hippelates pusio* disseminates the disease germs, producing "Florida sore eye" (Schwarz, 1895). Dewèvre (1892) reports experiments which showed that pediculi may serve as carriers and propagators of impetigo.

2. *Active.*—An active part may be played by blood-sucking flies in the propagation of bacterial diseases. Experimental evidence is wanting, though clinical writers report a certain number of cases of anthrax, septicæmia, pyæmia, and erysipelas as arising from the bites of flies. In the case of anthrax subjective sensations very frequently lead patients to declare that they have been bitten by an insect, whereas this is not the case. In many cases infection may result from an infected fly being crushed by the person bitten. An active part has recently been attributed by clinical writers to blood-sucking insects in plague. Bugs and fleas were supposed to be the active agents here. Experiments made by the writer on animals with plague, anthrax, mouse septicæmia, and chicken cholera all gave negative results. In a large number of experiments made by allowing these insects to bite animals dying of the diseases named, and then immediately afterwards transferring them to healthy animals, not a single case of infection occurred. Though the dejecta of bugs contained virulent bacilli after twenty-four hours, they did not do so later. In fact it was shown that both fleas and bugs digest various pathogenic bacteria which they have taken up with the blood of diseased animals. Simond (1898) goes so far in his elaborate theorising as to conclude that plague bacilli may acquire a heightened virulence in the bodies of such insects. He attributes a very important share to these insects in the propagation of plague, but gives no evidence to prove his assertions. The entirely negative results of my experiments should weigh more than gratuitous assumptions. That a bug or flea filled with the blood of a patient containing plague bacilli may serve as a passive carrier of the germs may be safely concluded from my experiments with these and other germs which were seen to remain alive and virulent in the bodies of these insects for twenty-four hours or longer when they were kept at low temperatures. If such an insect were crushed and the skin scratched by nails soiled with the blood it contained, infection might readily occur. In warm weather the insects are physiologically more active, and consequently digest the micro-organisms more rapidly. It has been asserted that such insects as well as biting flies are capable of propagating

recurrent fever, the "bouton de Biskra," frambœsia, leprosy, tuberculosis, and yellow fever, &c., but decidedly more evidence is wanting before we can come to any definite conclusions in this respect. In the case of the three last-named diseases the evidence given may well be termed frivolous.

### THE PART OF INSECTS, ARACHNIDS AND MYRIAPODS IN THE SPREAD OF DISEASE DUE TO ANIMAL PARASITES.

*1. Insects, &c., whilst serving as Intermediary Hosts, may play :*

(*a*) A passive part, when they are devoured by a host of the parasite they contain. (*b*) An active part, when, as in the case of the tick in Texas fever, and various mosquitos in malarious affections of man and animals, they inoculate the parasite into a host by means of their probosces. (*c*) An intermediary position must be given to mosquitos in connection with *Filaria Bancrofti* and *Filaria recondita*, as they infect themselves by sucking the blood of the definitive host.

*2. Insects, &c., without serving as Intermediary Hosts, may play an Active or Passive part.*

(*a*) A passive part when they transport the eggs of animal parasites and deposit them in food, &c. Grassi (1883) made experiments on flies showing that they might transport the eggs of *Tœnia solium*, *Trichocephalus*, &c. ; and Stiles (1889-1890) informed me that he saw the eggs of *Ascaris lumbricoides* undergo developmental changes in flies raised from maggots which had been fed with the eggs of the parasites during warm weather. Provided that flies take up the eggs in a sufficiently developed condition, they might readily disseminate the parasite by dropping their excreta on food, or falling bodily into it. (*b*) An active part by carrying the diseased agent from one animal to another and inoculating the parasite. Tsetse-fly disease (Bruce).—*British Medical Journal, September* 9, 1899.

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## 21.—SIX CASES OF RASH AFTER ENEMATA.

By T. K. MONRO, M.A., M.D.,

Physician to the Royal Infirmary and Examiner in the University of Glasgow.

[The following is taken from Dr. Monro's paper. The full details of his six cases are omitted here :]

Cases of this kind cannot be explained away as drug-eruptions. Sometimes, it is true, drugs have been administered, though this does not necessarily render the example a doubtful one. For instance, it would scarcely be fair to attribute a rash observed on one day to a hypodermic injection of morphia given at 2 a.m. on the preceding day. But any doubt on this point is set at rest by the appearance of a rash in cases where no question of drugs can arise. Moreover, in two of my cases, a repetition of the enema was followed by a reappearance of the rash, and a case has been recorded where the rash persisted for more than a week owing to each one of the enemata, which were administered every second day, giving rise to an exacerbation of the cutaneous irritation.

So far as I have been able to ascertain, the published cases are confined to the English language, and, with a doubtful exception, to British literature. One case has been recorded in a boy of 11 years; all the other published cases, some twenty-six in number, appear to have been females, and the six cases of my own experience were all females. The two writers who have published the largest collections of cases—namely, Burford (who first drew attention to the condition) and Gardner, gained their experiences chiefly in gynæcological work. Two of my six cases, and another one which I was asked to see, but of which I have not detailed notes, were in patients suffering from gastric ulcer. Habitual constipation, whether primary or secondary to gastric disorder, seems to be the condition which is most nearly fulfilled by all the cases in common, and which best accounts for the overwhelming preponderance of the female sex. The patients are generally adults. Gastric and enteric cases are likely to be between 20 and 26 years of age; gynæcological cases will probably be rather older, as a rule. The rash, however, has been observed in childhood. The rash may occur in an individual who has previously used enemata without any untoward result. It is possible that the recumbent posture may favour it. A second enema may again induce a rash, and in the same patient a third enema may or may not induce it.

The interval that elapses between the administration of the injection and the appearance of the eruption is commonly about twelve hours; but it may be more than twenty-four hours, or it may be as short as two hours. In a case where enemata were given every second day, and the rash recurred on each occasion, the first interval was six hours, and each later one three hours (Coupland). The duration is usually two or three days; but it may be twenty-four hours or less, or it may be four days.

Three principal types of eruption may be distinguished—the scarlatiniform, the measly, and the small-whealed urticarious; but two or all of these may be present in one individual. The first variety is of special importance because it may give rise to fears of scarlatina, and the third because of the severe itching with which it may be associated. A rash has been observed to maintain the urticarious form for twenty-four hours, and then to become scarlatiniform for a few hours, after which it reverted to the original type (Moorhouse). Either the objective or the subjective phenomena may first attract attention. Thus, the friends may notice the redness of the face before the patient is aware that anything is wrong. Or the itching of the skin may lead to the discovery of the rash. The distribution varies in different cases, and is not always strictly symmetrical. The buttocks and thighs, and perhaps the face, may be considered the seats of predilection ; but the rash may involve other parts of the body. As a rule, the eruption is not associated with pyrexia, and any acceleration of the pulse is unimportant. Quite exceptionally, a temperature of 101° or 102° has been observed. In a few cases the throat has been slightly sore, or at least reddened. The tongue may appear unduly red, or may be furred ; but these conditions may be connected with the digestive or other trouble for which the enema is administered. In one or two of my cases the patients have had headache, sickness and vomiting ; but whether the agent that caused the rash was also the cause of these symptoms is not certain. The rash may be associated with a severe burning sensation and intense itching. This is an important point in differentiating the case from scarlatina ; but it must be remembered that, even in the urticarious variety, the itching may be very slight. In one case desquamation occurred after the rash had been out for three days (Coupland); but this feature is quite exceptional. The urine remains free from albumen. Staveley asserts that in cases of this kind indican can be detected in the urine, whereas it is rarely to be found in the early stages of scarlet fever, and he accordingly recommends this as a valuable diagnostic point. Different observers, however, have failed to obtain the indican reaction, so that the test cannot be relied upon. The rash occurs only after the use of bulky injections, and never, so far as I am aware, after glycerin or nutrient enemata. It has been generally supposed that the eruption is the result of fæcal absorption, the large quantity of warm water softening the solid contents of the intestines, and doubtless dissolving some of them, so that a considerable quantity of excrementitious matter is rapidly absorbed. This being partly excreted by the skin gives rise to the rash. Morgan, however, suggested in 1895 that the cutaneous lesion resulted from the use of a particular kind of soap in the enema, and shortly afterwards Gardner brought forward a considerable number of cases in which he had observed a rash after the use of hard yellow soap, while, on the other hand, he had met with no rash in 400 cases where soft soap was employed. Accordingly he concurred in the view that the particular variety of soap was the main factor in the production of the rash. Gardner found that the hard soap contained a trace of iron, and was very slightly alkaline in reaction. Burford, in his original description, stated that the eruption follows 3 to 4 per cent. of the enemata administered, and that any fluid will do if used in sufficient quantity. It is not clear, however, that he experimented with different kinds of soap. Staveley says that the rash is common, not only after enemata, but also after the administration of a brisk aperient in chronic constipation, and in the later stages of acute intestinal catarrh when peristalsis is restored to the paralysed gut. An objection to the theory that the kind of soap employed is responsible for the rash is that the enema may be repeated in some of the cases without causing a reappearance of the rash. In one of my cases the first two enemata were followed by rashes, and the third was not, although the same variety of soap was used on all occasions. On the theory of absorption the explanation of this is that the earlier enemata cleared away the fæcal accumulations. The other theory implies that a small proportion of individuals have an idiosyncrasy towards hard soap, but it is not so easy to see why this should cease to manifest itself after one or two enemata.

Thus far, however, the lesson of experience is that soft, and not hard, soap ought to be used for enemata. By attention to this we may hope to avoid the rash altogether, and whether the hope is realised or not, the question as to the immediate cause of the rash will be so much nearer its settlement.—*Glasgow Medical Journal, September*, 1899.

## 22.—FORMALDEHYDE AS A POISON.

[The importance of this leading article from the *New York Medical Journal*, August 26, 1899, is obvious.]

"The virtue of formalin has been its positive antiseptic and supposed non-toxic and non-irritant properties. It is being extensively used, not alone by physicians, but by the laity, and especially the farming community, as well. The ravages of the potato scab fungus, which has been so destructive to the tubers, have caused investigations at the agricultural experimental stations, with the result that bulletins were issued recommending the use of formalin as a safe and most reliable germicide." So says Dr. Charles Bock, resident physician to the Indiana School for Feeble-minded Youth, after relating a case of fatal poisoning with formalin, in the *Fort Wayne Medical Journal-Magazine* for July. On the farm connected with the school, a man was treating seed potatoes with the four-per-cent. solution of formaldehyde. During this man's temporary absence, one of the inmates, a "low-grade imbecile," twenty-six years old, strong and healthy, drank from an ounce to three ounces of the solution. He immediately complained of pain in the stomach and began to vomit. The vomited matter was stained with blood. Large quantites of albumen water were given at once, and he had but little difficulty in swallowing it. Free vomiting was produced with a tenth of a grain of apomorphine given subcutaneously. At the end of two hours the man seemed but little the worse for his rash act, although he was somewhat weak and complained of slight pain in the stomach. The administration of albuminous drinks was continued and he seemed to improve until the sixteenth hour, when his pulse began to flag. It continued to grow weak, and rose to 92 in frequency, in spite of repeated large doses of strychnine given subcutaneously, together with one dose of nitro-glycerin and several doses of sparteine by the mouth. At the twenty-ninth hour his respiration was 40, he was getting restless, and his heart was failing. Seventeen ounces of normal saline solution were injected under the skin, and two hours later sixteen ounces were thrown into a vein, but he presently died. During the last hour of his life there was occasional slight cyanosis.

At the post-mortem examination the upper and middle thirds of the œsophagus showed slight signs of inflammation. The stomach contained four ounces of dark fluid free from formalin. Its walls were in some places more than an inch and a half thick and very œdematous. The cardiac end was very red and highly inflamed. The remainder of the organ was necrotic, dark, and tough, and cut like old leather. In the duodenum there was an inflamed area confined chiefly to the valvulæ conniventes. Evidently the public ought to be informed that formaldehyde preparations strong enough to be of value as antiseptics and germicides should be handled with caution and not left where children or imbeciles can get access to them.

# DISEASES OF THE NERVOUS SYSTEM.

## 23.—PUERPERAL PSYCHOSES.

By Prof. V. Krafft Ebing, Vienna.

In the *Med. Ztg.*, Vienna, for the 30th May and the 6th and 13th of June, 1899, the author contributes three important articles on puerperal insanity. With regard to its frequency, he states that in England the percentage of cases is only 8 per 100; in France it is from 10 to 12; in Austria about the same number; while in Germany it varies from 13 to 21. In general terms it may be stated that where the social conditions are unfavourable, as in large manufacturing districts, especially where illegitimate sexual intercourse prevails, the cases of puerperal insanity are more numerous. Early marriages, where the female has not reached mature development at the time of conception, are undoubtedly conducive to the disease. On the other hand, in agricultural districts, where the moral and social condition of the people is good, and where too early marriages are not the custom, the affection is comparatively rare. Hereditary influence is regarded as a factor of importance in about 40 per cent. of the cases. The great physical cause is, however, to be found in the nutritive alterations and in the changes which occur in the body weight during pregnancy and after parturition. Such nutritive changes form the groundwork of corresponding functional changes in the nervous system, which render it peculiarly susceptible to physical disturbances.

The mental affections of the puerperium are divided into those of pregnancy of the puerperal state and of lactation. Two forms of the psychoses of pregnancy are differentiated—an early and a late form. The early forms are few in number and unimportant in character ; they occur during the first months of pregnancy among women who are highly predisposed by heredity to insanity and to the neuroses. The symptoms are limited to disequilibrium of the psychical functions, but may end in forms of melancholia. The cessation of menstruation in persons who are in the habit of indulging in illicit sexual intercourse, necessarily suggests pregnancy and leads to emotional depression. Even in morbidly nervous married women the first indications of pregnancy may be attended with fear and agitation which leads up to slight mental disturbance. Experience shows that these mental affections disappear during the second or third months. Only in a very small proportion of cases do the symptoms continue when it becomes a question of producing abortion. It is only very rarely, however, that this course may be decided upon, for the risks are often as great as in ordinary parturition. The insanity of the later months of pregnancy is different, for it is connected with the physiological changes occurring in the body of the pregnant woman. Probably some inherited changes in the composition of the blood affect the relative proportion of the white blood corpuscles, the constitution of the fibrin or the puerperal osteophytes. On the other hand, the mental emotion caused by the near approach of the birth of an illegitimate child, the timid fear of something going wrong or the dread of pain, as well as innumerable other disturbing factors, affect the ill-balanced mind of a predisposed woman at this period. The form of mental disease in the later months of pregnancy is almost exclusively melancholia or hallucinatory insanity (Wahnsinn). After parturition, even when the labour is a normal one, there is no assurance that the insanity will end; it may even become worse, and prolong itself for a considerable time after parturition.

The insanity of parturition is also divided into an early and a late form. The early form usually occurs before or about the tenth day after birth. When labour has been protracted, painful, or attended with loss of blood, the symptoms are those of collapse delirium (inanitions delirien), such as is met with in losses of blood from ordinary causes, great exhaustions, serious illnesses, and similar states. Mania and melancholia are rarely met with in this early stage. Accompanying the symptoms already mentioned, we often meet with acute infection by micro-organisms from the genital tract. The condition is often attended by fever, and our first duty, when the patient is placed in bed, is to find out whether there is an increased temperature or not, upon which fact depends the diagnosis of the mental condition and its treatment, or the discovery of local affections requiring attention. The apyretic cases are usually due to shocks of post-operative character occurring in highly predisposed individuals. The later forms of puerperal insanity depend most probably upon the complicated processes of involution proceeding within the genital tract upon changes in the ovaries or upon returning menstruation. The loss of 200 to 300 grms. of menstrual blood from the weakened body of such women completes the last link in a chain of causes which tend to upset the mental equilibrium. The first signs of returning menstruation should therefore be carefully looked for, and every means adopted to check the flow.

The insanity of lactation rarely occurs before the end of the third month of nursing. It depends usually upon insufficient alimentation, and occurs most frequently in multiparæ who have borne children at frequent intervals and who have suckled them. The patients are usually neurasthenic, and the symptoms are those of a mild, curable dementia, ending often in melancholia. The puerperal insanities are in no respect to be distinguished from other forms with a different etiology. All that can be truthfully asserted is that they manifest a severer organic symptomatology, resting upon a more serious foundation, and that we must regard them as dependent upon anæmic conditions accompanied by implication of the sensory, especially the sight, centres.

The prognosis is favourable in the pure uncomplicated cases; as many as 63 to 70 per cent. recover. In England the rate is as high as 80 to 85 per cent. With such a prognosis treatment becomes a matter of the first importance. Rest in bed is absolutely necessary in all cases. Sleep is always disturbed, and generally absent, therefore hypnotics of some kind must be resorted to. If rest in bed, with the head kept very low and the administration of abundance of nourishing food, is not sufficient to relieve the condition, such hypnotics as paraldehyde, sulphonal, or trional may be tried, with generally good effect. The most excellent of all hypnotics is chloral, but its continued use is destructive to the red blood corpuscles, and ultimately does harm. When the sleeplessness is obstinate, chloral may be given with very good effect about once a week. The patients must be liberally fed with an abundance of good nourishing, easily digestible food. The condition is one of anæmia with exhaustion, and the clear indication for its removal is a restoration of strength.

Finally, with regard to prophylaxis, the marriage of undeveloped girls should be discountenanced. After one attack the patients should be warned against the danger of another pregnancy. When there is reason to fear puerperal insanity, chloroform should, if possible, be administered during labour ; labour should be facilitated by the use of forceps, and bleeding should be checked as far as possible.—*Abstract from the Edinburgh Medical Journal, August*, 1899.

## 24.—THE TREATMENT OF EPILEPTICS AND IMBECILES.

By G. E. Shuttleworth, B.A., M.D.,

Formerly Medical Superintendent Royal Albert Asylum, Lancaster ; &c.

[The following is an excerpt from Dr. Shuttleworth's paper.]

In the present state of the law the provision for sane epileptics must of necessity remain in the hands of charitable enterprise. Happily an excellent beginning has been made by the formation of voluntary institutions at Maghull, near Liverpool, dating from 1889, and accommodating 119 patients of both sexes ; Lady Meath's home for epileptic women and children at Godalming, with about 50 patients ; and, finally, the colony at Chalfont St. Peter, founded in 1894, and now affording accommodation in six cottage homes for nearly 150 epileptics—men, women, and children. Lately also a small home for pauper epileptic children has been opened at Lingfield, Surrey ; and still another colony at Chelford, Cheshire, is shortly to be started, by the help of the Lewis Trustees, for some 250 epileptics from Lancashire and Cheshire and adjacent counties.

The reports of the institutions which have been longest in existence are distinctly encouraging. Not only do they record good results from judicious care, feeding, and occupation, in the diminution of the number of fits (in some cases apart from drug treatment), but it is remarkable that (according to Mr. Penn Gaskell) only one colonist has had to be discharged from Chalfont on the ground of insanity during the five years of its existence ; and a similar account comes from the Meath Home that, out of 20 patients discharged, only one developed insanity. At Maghull, also, only one patient has had to be discharged on account of insanity. The clear inference seems to be that if only you put your epileptic early enough under favourable surroundings, give him suitable employment as much as possible in the open air, so withdrawing him from loafing and the consequent temptations of great cities—drink and sexual vices—the chances are that you may save him from becoming insane. And even if he have passed the border line the experience of American institutions seems to show that, if not mixed too much with the victims of confirmed insanity, he may lead a fairly useful life employed in the labour of the colony, though how far he will be amenable to curative influences has yet to be seen. Time forbids my entering upon the financial aspects of the question ; but if, as Dr. Spratling contends, the inmates of a large colony can be maintained at about £20 per head—though at present the cost varies at different colonies from £35 to £50 per head—the contrast with ordinary asylum expenditure need not be prohibitive.

With regard to provision for imbeciles—and more especially young imbeciles—as distinguished from the insane, I feel that my feeble utterances may be well compared to "a voice crying in the wilderness," and I do not propose to detain the Section by discoursing on the subject at any great length. I will merely say that, apart from the training institutions, such as Earlswood, the Royal Albert Asylum, Lancaster, the Eastern, Western, and Midland Counties Asylum for Idiots, but little provision has been made for this class outside the metropolitan district, other than as ordinary inmates of the county lunatic asylums. Honourable exception must, however, be made in the cases of the county of Middlesex, where there is a separate annexe in the grounds of the lunatic asylum for 200 imbeciles, chiefly young imbeciles ; the county of Northampton, where there are separate wards for 50 ; the county of Hants, which has a block for 50 idiot children in connection with the county asylum near Fareham ; the county of Lancashire, which has utilised Winwick Hall for the accommodation of 50 imbecile boys ; and the Birmingham City Asylum at Rubery Hill, which has a separate ward for a similar number. Special accommodation is thus provided by Poor-law authorities for less than 400 imbeciles throughout England and Wales outside the metropolitan district ; in the latter there are three special institutions for imbeciles with a total of 6,000 beds, the Darenth schools having accommodation for 1,000 young imbeciles. One system or the other must be faulty, for if the London standard be the correct one, the provinces ought to provide for certainly no fewer than 5,800 young imbeciles alone. Even taking into account the accommodation for pauper imbeciles, provided by the voluntary institutions, which may be stated as about 450, the gross deficiency of accommodation in this country exceeds 5,000.

Had time permitted, I should have been glad to refer to the necessity of special arrangements for the education of sane epileptic children in elementary schools. It is often a question as to what course should be taken in the case of a scholar whose mental condition is only abnormal at the time of invasion of the fits. I must content myself by simply referring to the recommendations of the Departmental Committee on Defective and Epileptic Children (of which I had the honour to be a member), and which may be condensed as follows :

The number of epileptic children is estimated at one per 1,000 of whom one-sixth are severely afflicted. It is recommended that epileptic children of normal intellect should be left in ordinary schools if the fits are not frequent or violent fits do not occur in school, and that teachers be provided with instructions as to the treatment of children known to be epileptic. Feeble-minded epileptics may be received into special classes when the epilepsy is not severe ; and for such cases it may be necessary to provide guides or conveyances between the home and the school. With regard to severe cases, whether mentally feeble or otherwise, treatment in residential homes seems essential, proper classification being provided. Each house of residence should consist of one floor only, and should not contain more than twenty inmates ; but there may be an aggregation of such homes round an educational centre, as in the colony plan. It is recommended that school authorities should have power both to provide homes and to contribute to voluntary homes which conform to the conditions laid down.—*British Medical Journal, September* 16, 1899.

## 25.—SIMULATED DISEASE OF NERVOUS SYSTEM.

By Samuel Bell, M.D. (Detroit),

Formerly Medical Superintendent of the Upper Peninsular Hospital for the Insane.

[The following is taken from Dr. Bell's paper :]

Under this head may be included paralysis, convulsions, epilepsy, ataxia, tremor, choreal movements, anæsthesia, pain, and hyperæsthesia ; also of the special senses, chiefly vision and hearing. Epilepsy is a frequent disease and of striking nervous characteristics, the epileptic fit being so well recognised by the laity that it is most frequently feigned by malingerers. It is commonly feigned by criminals with the object of escaping work or to receive more sympathetic treatment, probably in the hospital. There are those among the criminal class who circulate in public places and feign epileptic attacks They so arrange the seizures as to have them occur in crowded places, in order to attract the passers-by and to obtain sympathy and alms from those benevolently inclined. There are generally several of these malingerers who club together. One undergoes a violent epileptic seizure and draws the attention of the crowd, while the other members of the gang pick the pockets of the bystanders. The individual as a rule who attempts to simulate epilepsy or hysteria has the attacks only when he thinks he is observed, and seldom has them in dangerous places. A very interesting case was reported in the *Boston Medical and Surgical Journal* of a man by the name of Clegg. He was able to baffle the skill of the prison officials and physicians, and escaped punishment several times on account of his proficiency in feigning epileptic attacks. This man by much study and observation had learned to imitate fits very accurately. Physicians and others during the attacks would thrust pins and needles into him and also under his nails, and he would manifest no indications of sensation, or flinch when the cornea was touched. The frothy saliva would exude from his mouth, his head would turn on its axis, body twist in the attack, and at times he would have clonic spasms of the muscles of the neck, so that his head would pound against the floor with force enough to abrade the scalp. The facial expression he could assume perfectly, and the various scars on his face, head, and body he was fond of calling attention to. Eventually he was detected, and one reason which aided in leading to his detection was the definite motive he had for feigning. He would have fits on visiting the physician's office for the first time ; how rapidly he could change from an epileptic to a natural expression when he thought he was unobserved, also the fact that in the fits the fingers were not closed over the thumbs, nor were the nails livid ; and how easily the rigidity could be overcome (the hands would close again after they were once opened)—these were among a number of indications which led to his detection. Dr. Coombs, of Boston, relates as his experience that out of ninety patients who were epileptics who had visited his office he could not recall over three who had fits during the visit. It is often frequently remarked when the physician is going his rounds in the wards of an insane hospital where there are many epileptics how seldom he will observe a patient in an attack. In almost daily visitation where we have about twenty epileptics, some of them having fits very frequently and in succession, I cannot recall more than three in an attack during my visits in the course of a year.

*Symptoms Difficult or Impossible to Feign.*—It may be remembered that there are symptoms which it is impossible to feign—for instance, during a genuine attack the patient is unconscious and has entire loss of sense. The pupils are often dilated and nearly always immobile, and the conjunctivæ are anæsthetic. The patient is pale at the beginning of the attack, and later becomes cyanotic if the convulsions be severe. After a severe attack there is profound stupor, which lasts for an indefinite period. There is also in a true case of epilepsy paralysis of the sphincters. Paralysis being also of frequent occurrence and readily observed, it is, next to convulsions, most likely to be feigned, although if paralysis be accompanied by atrophy and the softening condition of the muscles, as is frequently the existing condition, feigning is not probable. While there are no hard and fast lines that can be laid down in detecting simulation of diseases of the mind and nervous system, there are a few principles that if observed and followed will render it very difficult, if not impossible, for an impostor to succeed. The simulator is at a disadvantage; he must be as familiar with the disease which he attempts to feign as the examining physician, must stand examination by all tests usually employed in clinical examinations, and must constantly be on his guard lest he betray himself in an unguarded moment. It can be readily observed that the possession of such knowledge is beyond the ordinary lay mind. It is possible that an intelligent layman could be instructed by a competent physician to become an expert simulator. Even when such is the case, close observation of the differences between the extent of symptoms from which he professes to be suffering and the genuine suffering can almost always be noticed. For instance, one important point to remember is that, as a general rule, the simulator will assume an exaggerated condition, and the insignificant symptoms will be magnified and the clinical picture be much overdrawn. If he attempts to feign paralysis, he will make paralysis the important symptom, when in actual conditions paralysis and weakness exist together. The same will apply to loss of sensation, and the simulator will complain of complete anæsthesia, while in all probability there is only diminished sensation. He will give expressions of suffering from violent pain, when it is altogether likely that if any pain is present, it is an average ache or pain. He calls attention to his symptoms. They do not have to be searched for as in the genuine sufferer, and close questioning will detect faults or contradictory statements, although it must be remembered that the statements of patients suffering from the actual disease will conflict, especially those suffering from nervous disease and loss of feeling.

Many instances are related by neurologists where the sensory tests, more or less severe, have been applied to the feigner successfully under the stimulus of being examined under such circumstances; the cornea and conjunctivæ could be pricked without winking. Pins and needles have been thrust into the skin and flesh, and strong electrical currents and hot irons applied, without causing the patient to flinch or give any manifestation of pain; but when the patient was taken unawares, as in the instance of Honig when he caused a needle to pierce his patient without any outward manifestations of pain, the next day the same prick of the needle was made in him unawares, when it immediately caused an outcry. Several cases are related when a bucket of cold water was thrown on a person while standing in front of him without any effect, but when the refrigerating beverage was thrown from behind and unexpectedly the man immediately started from his position. Many tests which may be made without the patient being aware will suggest themselves, and be very effective. The detection of loss of vision is comparatively easy. In order to feign complete blindness requires a great amount of ingenuity, skill, and perseverance. Not many have sufficient control of their eyes to have them remain unmoved when objects are moved in close proximity to them. The general movements and rigid stare and the step are not easily counterfeited. Such changes in a large majority of cases can be detected by the use of the ophthalmoscope.—*Medical Age, August* 25, 1899.

## 26.—DELIRIUM.

By William Hirsch, M.D.

[Remarks on diagnosis and treatment are alone included here.]

Having already alluded to a twofold relation between delirium and the acute infectious diseases, and discussed the delirium arising during a febrile disease and that accompanying a psychosis which is the result of such an ailment, I will now consider a third group which shows a relation between the two conditions. A person previously in perfect health may suddenly be thrown into a state of agitation and confusion. An acute psychosis is diagnosticated and the patient is transferred to an institution. After awhile it appears that he is suffering from typhoid fever or some other infectious disease. Acute delirium of this nature without any prodromata occurs, especially in erysipelas and acute articular rheumatism, in typhoid fever and meningitis. But even minor infectious diseases, such, for example, as a follicular amygdalitis, have been said to give rise to similar phenomena. The diagnostic and therapeutic importance of a careful physical examination in these cases is self-evident. A number of cases, no doubt, starting with elevated temperature and diagnosticated as so-called "delirium acutum," may belong to this category. The diagnosis of meningitis usually offers no great difficulty on account of the typical symptoms on the part of the cranial nerves. In typhoid fever, the enlarged spleen, the quality of the dejections, and the presence of a roseola will lead to the correct diagnosis, although these symptoms may sometimes be absent. The correct somatic diagnosis of acute articular rheumatism is, as a rule, not difficult. The examination of the urine in a case of delirium of acute origin must never be neglected. Although it is a well-known fact that in the course of psychoses, and especially during delirium, albumin and hyaline casts may be found in the urine with no post-mortem changes in the kidneys, yet it is not rare for an acute delirium to start a psychosis which is dependent upon a chronic, possibly latent, nephritis. Occasionally the cerebral features of a uræmia may present the clinical picture of acute delirium, although as a rule they are characterised by epileptiform seizures or comatose conditions. The cerebral symptoms of some other forms of disturbed metabolic processes may assume the form of delirium. Now and then an acute delirium may take the place of the familiar diabetic coma, and it may, in fact, be the first symptom of an overlooked diabetes.

So far as the treatment of delirious conditions is concerned, it will be determined by the therapeusis of the underlying disease as soon as this is recognised. Nevertheless, there are certain features of the treatment to be kept in mind, especially with reference to the symptomatic treatment of delirium itself. As I have frequently emphasised, a true delirium is the outcome of exhaustion, and this furnishes an indication for free stimulation and for preservation of the bodily strength. Abundant nourishment is consequently primarily indicated. In cases of protracted delirium, when the patient can not take his nourishment naturally, the use of the stomach-tube must not be neglected. Nutritive enemata alone are not sufficient, and should be employed only when feeding through the stomach tube is contraindicated for one reason or another. When there is enfeebled heart action, it is well to add wine to the food given. If the heart's action is very much diminished in force, subcutaneous injections of ether or camphor should be resorted to. When the circulation is very much impaired, intravenous or subcutaneous infusions of a saline solution are indicated. By combating the motor restlessness, much can be gained in the preservation of strength. The patient should be kept in bed if it is at all possible. The choice of sedative remedies depends in part upon the character of the delirium. In the cases of patients who have feelings of great anxiety and whose clinical conduct resembles that of melancholic frenzy, or when the delirium has developed from a melancholia, subcutaneous injections of opium or morphine are rapidly efficient in producing quiet. If the indication to reach the psychomotor centres directly exists, as in a case of maniacal frenzy, hypodermic injections of hyoscine or hyoscyamine are efficacious. Subcutaneous injections of ergotin are often followed by a good result in cases of delirium which seem to be dependent upon congestive conditions, such as paralytic mania, epileptic insanity, menstrual delirium, &c. Warm baths and wet packs frequently exert a sedative action. If the delirium is accompanied by fever, ice applications and cold sponge baths are useful. Venesection is to be condemned without reserve. The naïve view that hyperæmia of the brain is alone causative of conditions of excitation belongs to the past. When a hyperæmia is present, it is the result, not the cause, of the pathological process, since neuroparalytic phenomena in the vasomotor areas evoke severe disturbances in the circulation and thereby cause a cerebral congestion. The treatment must therefore be directed toward the stimulation and regulation of the circulation, and must not include, under any circumstances, weakening measures, such as venesection, purges, blisters, &c. The fact that delirium so frequently arises after severe loss of blood and in conditions of inanition should be sufficient caution against the withdrawal of blood and other similar procedures.

Delirious patients sometimes died from fat emboli in the lungs. The injuries inflicted upon the subcutaneous fat in various parts of the body through the motor restlessness of these patients formed the starting point from which these emboli became lodged in the pulmonary arteries, in consequence of which death supervened. Although such occurrences are comparatively rare, they form sufficient indications to protect delirious patients from injuries as much as we possibly can. Seemingly insignificant bruises may be the starting-points of grave complications, and this danger is materially increased by the fact, as we have seen, that a great number of delirious patients suffer from diseases of an infectious or toxic nature, in which the tissues are in a condition of diminished resistance.

Considering the results of our discussion, we may conclude by saying that delirium, in the sense of the definition above given, is an independent psychopathic condition which, however, does not form a *morbus sui generis*, but occurs during the course of a great many mental diseases. A correct conception of the pathological nature of this condition is of the greatest importance in diagnostic, prognostic, and therapeutic respects. —*New York Medical Journal, July* 22, 1899.

## 27.—HYSTERICAL BLINDNESS.

By Arthur T. Muzzy, M.D.

[From Dr. Muzzy's paper.]

While most writers in generalising state that young girls are the most frequent victims, the cases reported do not support such a statement, as few of such reports are under twenty years, and from this age to forty-five or fifty the numbers run quite impartially. Cases are encountered among males, but only in about the same proportion that holds in hysteria with other and more customary manifestations. De Schweinitz, in his work on the eye, in his brief description of hysterical blindness makes the following points: It occurs usually in girls and women, sometimes in males. The loss of sight is complete and is almost always on one side. The pupil reacts promptly when the sound eye is covered. The ophthalmoscopic picture is normal. Many patients have achromatopsia or dyschromatopsia, and hemianopsia besides. Two points he does not mention are suddenness of the onset and the anæsthesia of the conjunctiva and cornea. Very frequently the blindness is complete at once. And as the vision returns, it may come at the centre of the field or as a contracted field, with a scotoma or blind section near the centre. Many times, however, instead of complete blindness, sudden dimness comes on at first, and deepens more or less rapidly to complete loss. Those observers who speak of anæsthesia of the conjunctiva or cornea say it is characteristic. Yet it is certainly but seldom mentioned, and some note its absence. Another point is sometimes recorded that should prove of considerable help in diagnosis—that is, that during testing by lenses, ophthalmoscope, and perimeter the vision varies, growing worse from the low nervous vitality of the patient, often being accompanied by photophobia and profuse lacrymation. Sachs, in his paper before the Ophthalmic Section of the academy, December, 1898, stated that a strong argument for hysteria in any eye case was an unusual association of symptoms with great variation in the symptoms. The prognosis in all forms is good, though the condition may persist for months, and even years.

Of the forms in which hysteria affects the eye, by far the most frequent is concentric contraction of the visual field. The next in frequency is disturbance of the colour sense—achromatopsia and dyschromatopsia. Frequent mention is made of a true functional ptosis, and a few record paralyses and paresis of the recti muscles, especially the external or abducens. Buchanan, in *The Lancet*, describes quite at length paralysis of both abducens, and Pooley, in the *Medical Record*, refers to paralysis of one. Baruch and Peck, in the *Medical Record*, also describe the case of a young man of twenty-one years who, with other symptoms of ocular hysteria, had diplopia. Hemianopsia is recorded by a few, though a true functional hemianopsia is doubted by many of the best observers. Noyes, however, refers to such a condition reported by Pflüger, and Dana also mentions its occurrence. Lagrange describes with much care hysterical uniocular diplopia. This strange phenomenon is of two kinds. The majority are of optic origin, with irregular refraction, due generally to spasm of accommodation, and this causes two or more images on the retina. This optic or peripheral form is mostly a polyopia. The second variety and still more rare is central and due to irritation of the visual centres, described by Duchesne, of Boulogne, in 1864. Lagrange illustrates with the case of a girl of twelve years who, after headache, photophobia of the left eye, and sleeplessness for a short while, was subject to a sudden permanent diplopia of the right eye, which was emmetropic ; the vision was only $\frac{1}{3}$. There was characteristic hysterical dyschromatopsia with complete anæsthesia of the conjunctiva. The false image was above and from four to five centimetres distant from the true image, without regard to how far away the object was. It should be borne in mind also that hysterical manifestations may come on in one suffering from specific disease or cerebral tumour or other organic disturbance of the brain. The diagnosis here often becomes difficult and only to be positively made after careful and more or less lengthy watching and study of the individual case. Treatment in these cases is very unsatisfactory. Arthur Booth, in the *Medical Record*, promises a good deal with hypnosis or the suggestive treatment. But Millbury, also in the *Medical Record*, fails almost wholly with it. As to other forms of treatment, very little can be said ; the general condition of the patient, rest from overwork, nerve tonics, and carefully adjusted exercise, with avoidance of all false and unnecessary excitement, serve best.—*New York Medical Journal, September* 16, 1899.

## 28.—PROPHYLAXIS AND MANAGEMENT OF APOPLEXY.

By Dr. N. S. Davis, Jr.

The causes of apoplexy, almost uniformly, are thickening, and hardening, and brittle condition of the arteries. This condition is usually not confined to the cerebral arteries, but is common to many arteries in various parts of the body, although the lesion is frequently more marked in the cerebral than in other arteries. The exciting cause of rupture of an artery is change in blood pressure. It may be the result of sudden physical exertion ; sometimes it is produced by intense mental strain or by overaction, usually temporary, of some of the viscera, as of the digestive organs. Occasionally a change in posture is the exciting cause of increased blood pressure. Unquestionably, in some instances, distension of the bladder has an influence, particularly in old people. A very considerable distension of the bladder increases it, and the recumbent posture heightens it still more. Frequently the occurrence of apoplectic attacks at night can be explained in this way. In very many instances patients first discover that they are paralytic when they are awakened by an inclination to make water. I speak of the milder cases which are met with every now and again. Brittleness of the arteries, or permeability, or easy rupture of them may be caused in other ways. Miliary aneurysms of the cerebral vessels are common. These are usually due to the same cause or causes as ordinarily produce thickening, hardening and brittleness of the arteries generally, and are only a part of the atheromatous state. They, however, occur also as a result of syphilitic poisoning, and less frequently from other infections. With these facts before us we can, to some extent, reason as to prophylactic measures.

Prophylaxis is rarely applied to the sclerotic changes in the arteries, for these lesions are fully developed, as a rule, when a patient consults his physician. Abstemiousness—diet, in mental and physical work, will help to prevent the growth of the lesions. The iodides can be given to lessen arterial tension, and to some extent, to influence the fibrotic changes that are taking place in the arteries throughout the body, but they exert only a slight influence on the fibrous or atheromatous change ; indeed, it is so slight as to be not demonstrable in many instances. The long-continued use of the iodids, which is so often recommended in such cases, is useful because of their influence on arterial pressure, more than on the fibrous or sclerotic changes in the arterioles. Although the underlying arterial changes can be influenced only slightly, blood pressure can be to a considerable extent. Unusually high arterial tension must be lowered. Patients should be cautioned against overexertion, either physical or mental, and against overloading and overtaxing the digestive organs ; they must also be cautioned to maintain regularity of bowel movements, as high arterial tension is often produced by constipation, and by overloading the gastro-intestinal tract. By dietetic restrictions, and by instructing patients with reference to the importance of emptying the bowels regularly, we can to a considerable extent prevent continued ill-effects which may be produced by the absorption of toxic materials from the intestinal tract. These toxins are believed by some to be the immediate cause of the arterial changes. It is, therefore, very important to maintain cleanliness of the gastro-intestinal tract in order to influence arterial pressure and to prevent absorption and the ill-effects of toxic agents on the arterioles generally.

Aside from these hygienic measures, we can also help to prevent the high arterial tension by the use of such drugs as the nitrites and the iodides. The nitrites usually produce a fleeting effect on arterial tension. They are to be used temporarily when the results of high arterial tension are particularly threatening—I mean when there are symptoms of pressure on the brain, or when there are symptoms connected with other organs of the body, showing that there is increased arterial tension, possibly persisting for some days. It is during this time that the nitrites can be advantageously used. The nitrites must be rather frequently administered, or else we get very temporary effects from them. The effects are so transitory that they can hardly be regarded as producing much of a prophylactic influence. On the other hand, the iodides produce very much less influence on arterial tension, but what effect they do have is much more prolonged; they are therefore decidedly better for persistent use. In almost all cases in which it is desirable to lower arterial tension, they are the drugs to be preferred. Of the iodides, unquestionably the iodide of soda is the best for long-continued use. It is necessary in some cases to give the iodides in doses of considerable size; in others moderate doses will produce the desired effect; by moderate doses I mean from 8 to 10 or 15 grains at most.

In giving the iodides, it is generally recommended, by therapeutists, to give them for long periods of time, and for the particular purpose of reducing arterial tension they can be continuously given for weeks. An intermission of from one to two weeks should be advised, every four to six weeks, and during the intermission, if it is necessary to use anything for the control of blood pressure, use the nitrites. The iodides should not be employed so continuously that the digestive organs are deranged by them.—*Journal of the American Medical Association, July* 29, 1899.

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## 29.—SYPHILITIC DISEASE OF THE BRAIN AND NERVES.

By James Taylor, M.D.

As regards brain syphilis, the most common of the several varieties is the condition of meningitis. In this affection there is probably a widespread thickening of the membranes, more especially of the pia arachnoid. Associated with this there is often a gummatous growth, which may come from the sheath of the nerve and compress the nerve so as to destroy it, and this is very common in the third or oculo-motor nerve, the one most frequently affected in syphilis. There may also be a condition of arteritis (with gumma of the arteries) and thrombosed veins, some being completely occluded, while others are only slightly thickened. In the brain there are separate gumma, mostly about the base, growing from the membranes, but depressing the cerebral substance, and so giving rise to symptoms which vary according to the structures which are depressed. As a result of these brain lesions, there are symptoms varying according to the position in which the various lesions occur. In meningitis affecting the convexity not infrequently the patient has a series of fits, and the case may closely simulate one of ordinary epilepsy. There is, in fact, evidence of irritation of the cortex. Then with endarteritis and blocking of the vessels paralysis occurs, probably one of the most important conditions met with as a result of syphilis. The patient becomes hemiplegic, and on examination we find he is free from cardiac disease and all sorts of kidney disease, and we naturally conclude that the hemiplegia is the result of syphilitic endarteritis. A good working rule is this: If a man under forty, who has no signs of heart disease or kidney mischief, has hemiplegia, the chances are that it is syphilitic hemiplegia. No matter what history the patient gives, it is our duty, as far as treatment is concerned, to regard the case as if it were syphilis. In cerebellar disease one of the most striking symptoms is the intense headache which is produced. In ordinary cases of cerebellar tumour, the headache, severe vomiting and optic neuritis are marked symptoms, and the same is true of brain syphilis. If the gumma or thickening does not press on the middle lobe of the cerebellum, there will be none of the staggering which is so frequently associated with that disease. As regards syphilis of the spinal cord, it is an extremely indefinite condition unless there is a gumma, and then there will be girdle pain, paralysis with spasticity, interference with bladder and rectal functions, and other general effects of pressure on the spinal cord, similar to those produced by bone pressure in caries of the spine. Such cases have to be treated energetically with mercury and iodide of potassium. Cervical pachymeningitis is a condition in which there is considerable thickening in the region of the neck, combined with paralysis in the arms and an affection of certain muscles and sometimes of sensation. This affection closely resembles progressive muscular atrophy, except that there is the pain at the back of the neck, some thickening in the same region, some affection of sensation as well as of motor power. The thickening in the cervical region is almost invariably the result of syphilis, and severe symptoms are relieved by anti-syphilitic treatment, but he cannot be given sufficient relief to restore him to complete health. With regard to the nerves, the commonest form of neuritis is that due to a gumma, and the commonest nerve to be affected is the third or oculo-motor. Syphilitic polyneuritis, as a pure neuritis, the author thinks does not exist, and where it is present he believes it is due to thickening of the membranes of the spinal cord similar to that which occurs in the cervical region in pachymeningitis; this may occur in the lumbar region and give rise to similar effects. Isolated neuritis does occur in cranial and spinal nerves, probably from small gummata pressing on the nerve and causing its destruction. In cases in which it is said that syphilis has been the cause of polyneuritis, the author thinks it will be found that alcohol was present as well, and this alone is sufficient to produce multiple neuritis.

As regards the *treatment*, the patient should be mercurialised as soon as possible, and it is best to do this by inunction. Iodide of potassium should be given in fairly large doses; 60 grains should be given during the day; this dose will do as much good as if 90 or 120 grains were given daily. The main point is to get the patient under the influence of mercury as soon as possible.—*From abstract in Treatment, August* 10, 1899.

## 30.—THE CEREBELLUM.

By J. S. Risien Russell, M.D., F.R.C.P., Assistant Physician to University College Hospital, London, &c.

In this lecture (*Dublin Journal of Medical Science, July*, 1899) Dr. Russell gives a useful summary of a portion of the excellent work which he has done during the last five years on the functions of the cerebellum, more detailed account of the various experiments having been already published in the Philosophical Trans. of the Royal Society and elsewhere. By ingenious experiments on dogs, Dr. Russell has shown that removal of one half of the cerebellum induces a state of increased excitability of the cortex of the opposite cerebral hemisphere. Removal of the *left* half of the cerebellum induces a state of increased excitability of the cortex of the *right* cerebral hemisphere. This increased excitability is manifested by the mode of behaviour of the muscles of the left limbs—that is, those on the side of the cerebellar lesion. The unilateral increase in the cerebral excitability was shown by the difference in the movements of the limbs when convulsions were produced by the intra-venous injection of absinthe, and also by difference in the movements produced by excitation of the cerebral cortex of each side with the faradic current. It would thus appear "that normally one half of the cerebellum exerts an inhibiting or controlling influence on the neurons of the cortex of the opposite cerebral hemisphere, and that with ablation of the half of the cerebellum this influence is removed, and increased excitability of the opposite cortex results."

Dr. Russell thinks that such influences can reach the cortex of the opposite cerebral hemisphere from one half of the cerebellum by means of the superior cerebellar peduncles. "After ablation of one half of the cerebellum the fibres of the superior cerebellar peduncle in the same side degenerate, and these degenerated fibres, when traced brainwards, are found to decussate, and some of them are found to terminate in the region of the opposite red nucleus, while the remainder terminate in the opposite optic thalamus." There is thus an indirect path to the opposite cerebral cortex through the optic thalamus. The removal of one half of the cerebellum appears to abolish some inhibiting influence which is normally exerted by the cerebellum on the cerebrum, and the path by which such impulses travel is apparently the superior cerebellar peduncle. The author then considers a number of symptoms that are of importance in diagnosing which side of the cerebellum is affected. As regards attitude, "the head is inclined to the side of the lesion, so that the ear and shoulder are approximated to each other, added to which there is arching of the spinal column laterally with concavity of the curve to the side of the lesion. In man the head may furthermore be rotated on its vertical axis so that the chin points to the healthy side—that is, away from the side of the cerebellar lesion." Unfortunately, in certain cases of cerebral tumour the same attitude has been present.

*Rotation* of the subject about its longitudinal axis is sometimes observed after removal of half of the cerebellum, but it is very rarely met with as a result of cerebellar disease in man. The manner of rotation in cerebellar affections may be explained by comparison with the rotation of a screw. "The animal or man is supposed to represent the screw, in either case the head of the subject corresponding to the head of the screw, moreover the screw is supposed to be that in ordinary use in this country, viz., a right-handed male screw. With this conception before us, all that is needed in describing rotation, in regard to lesions of the cerebellum, is to say that with a right-sided lesion the subject rotates like a screw entering an object, while with a left-sided lesion the mode of rotation is like a screw coming out of an object. General titubation and reeling are constant symptoms after removal of half of the cerebellum in animals, and are common in disease of the cerebellum in man. Russell has found in his experiments on animals that the reeling is in a direction away from the side of the lesion. In man the author thinks the direction of reeling is very unreliable as an indication of the side of the cerebellum diseased. Sometimes the reeling is away from the side affected, at other times towards the diseased side. "The nystagmus which occurs in unilateral lesions of the cerebellum is lateral, and is most marked when a voluntary attempt is made to turn the eyes to the side of the lesion." After experimental lesions a turning of the eyes away from the side of the lesion is noticed. Russell has not "noticed much departure from its normal position of the eye on the side of the cerebellar lesion, but the opposite eye is always displaced markedly downwards and outwards—*i.e.*, away from the side of the lesion." This displacement of the eyes is rare in cerebellar disease in man.

In man it is important to remember that abnormal positions of the eyes may be due to pressure on the nerves supplying the ocular muscles or to secondary infiltration of the pons by a growth originating in the cerebellum. The sixth nerve is most liable to suffer owing to its slender size and long course. It is therefore not uncommon to meet with paralysis or paresis of one or other external rectus. Sometimes it is the external rectus on the side of the cerebellar lesion, sometimes that of the opposite side, which suffers first. Occasionally there is weakness of the internal rectus on the side of the cerebellar lesion with displacement of the eye towards this side, but the author is unable to give a satisfactory explanation of this symptom. Turning of the eyes to one side may be due to secondary involvement of the sixth nucleus as a result of extension of the growth from the cerebellum to the pons. It is evident, however, from the facts which Dr. Russell brings forward, that great caution is necessary before drawing any conclusion, as to the side of the lesion, from the ocular symptoms.

Titubation and *inco-ordination* are among the constant phenomena in connection with cerebellar lesions in animals. This inco-ordination is more marked in the limbs on the side of the lesion, and there is in addition a true *motor paresis* of the limbs on the side of the lesion, but this symptom is only rarely met with in man, owing, no doubt, to compensation going on hand in hand with the slowly produced defects of disease. When motor paresis is met with the limbs on the same side as the lesion are affected, and not those of the opposite side as occurs in lesions of the cerebral hemisphere.

*Rigidity* due to spasms of muscles of the limbs on the side of the lesion, and to some extent of those of the opposite posterior extremity is a constant feature after experimental ablation of one half of the cerebellum, and the back muscles share in the spasm. But the author admits that he does not remember having seen any very definite evidence of such rigidity in uncomplicated cerebellar lesion in man.

*Tendon jerks.* After removal of half of the cerebellum both knee jerks are increased, but that on the side of the lesion is the more exaggerated. In man sometimes a similar condition is met with, but in other cases no difference can be made out as regards the knee jerks on the two sides; whilst in some cases both knee jerks are abolished. Anæsthesia on the side of the cerebellar lesion is often met with in experiments in animals, but it never occurs in uncomplicated cerebellar lesions in man. Clinically there are two symptoms which, if present, are of the greatest possible value in determining the probable side of the cerebellum affected by tumour. These symptoms are *facial paralysis* of the peripheral type, and *deafness*; both occur on the same side as the tumour. They also indicated that the tumour is situated at the anterior part of the posterior fossa of the skull.—*Dr. Williamson's Abstract in the Medical Chronicle, July*, 1899.

## 31.—ACUTE ANTERIOR POLIOMYELITIS.

By Henry M. Lyman, A.M., M.D.,

Professor of Medicine in Rush Medical College, Chicago.

[The following description of the symptoms of infantile paralysis is taken from Dr. Lyman's Clinical Lecture.]

The onset of the disease is usually very abrupt and violent; the child is suddenly attacked with a high fever, or with convulsions, or with severe vomiting and purging. Occasionally, the child appears fretful and languid for a day or two before the out-break. Sometimes, if old enough to express himself, he complains of headache, dull pain in the back, or wandering pains that are not definitely localised. I remember one rare case in which the occurrence of paralysis was the first noticeable symptom, and the usual stormy introduction was entirely omitted. But in the majority of cases the attack is of a decidedly febrile character. In a few instances there may be rigidity of the limb with muscular contracture, but these are usually symptoms of meningeal irritation and inflammation, induced by cerebro-spinal meningitis. After a brief prodromal period, frequently on the morning following a night of fever, paralysis is discovered. I have seen all four limbs simultaneously affected, but this is rare. Usually, only one or two limbs are paralysed, either one or both legs, or a leg and an arm, sometimes on the same side, occasionally on opposite sides. The lower limbs are more than the upper likely to be affected. The paralysis is not always restricted to the extremities. I once saw an infant of nine months left asleep on a bed beside an open window, while its mother went down town on a shopping expedition. During her absence a heavy shower suddenly fell; the servant forgot to close the window, and the child's clothing was soaked with rain. This resulted in a typical attack of poliomyelitis affecting all four extremities, the lateral muscles of the neck, and so many of the trunk muscles that respiration was somewhat impeded. The patient lingered for several months, and then died of inanition.

The febrile period seldom continues longer than eight or ten days. Electrical examination of the affected muscles at this time shows a reaction of degeneration in the muscles that are to remain paralysed. It is a favourable indication when the muscles remain excitable under the faradic current. After the disappearance of fever, convalescence begins, and usually results in the recovery of the degree of health that is normal for the individual patient. Children that were previously healthy and strong again become healthy and strong; but those who were originally delicate and feeble seldom reach any better condition. Gradually the muscles around the paralytic focus resume their function, but there always remains a central group, that is, a muscle or muscles, which never recover their integrity, always continuing more or less incapable of use. In the lower extremities it is the extensor of the toes, the peroneal muscles, and the tibialis anticus, that are most likely to remain permanently paralysed and atrophied. Upon the thigh the quadriceps extensor is most likely to be affected. The rhomboid muscles, the serratus magnus, the subscapular, and the deltoid are most susceptible about the shoulder.

Muscular atrophy begins at an early date, and progresses in the paralysed muscles until they are reduced to mere bands of connective tissue. The bones also undergo a process of atrophy that appears to be entirely independent of the correlative change in the muscles. The affected bones are shorter and smaller than their normal fellows, even though the muscles connected with them have escaped degeneration. Very rarely does the atrophy invade an entire extremity; the muscles are attacked in groups and clusters, so that commonly the balance that should normally exist between the antagonistic muscular bundles is destroyed, and deformity results. In this way are produced many of the cases of club-foot that reach the orthopædic surgeon; of these the most common form is *talipes varus*, compelling the patient to walk upon the external border of the foot. When the anterior muscles of the leg are atrophied, the calf muscles contract, and the patient walks upon the toes of the affected limb. When the quadriceps extensor of the thigh can no longer antagonise the flexors, the leg is drawn up at the knee, compelling the use of a crutch or an artificial attachment to lengthen the limb. The agility manifested by these limping patients is sometimes remarkable ; I remember a boy thus disabled and hobbling around on a crutch, who, nevertheless, could turn summersaults with untiring rapidity. When the muscles of the arm are attacked, corresponding paralysis and deformities are produced ; and lateral flexion of the spine may result from local paralysis affecting isolated bundles of the erector spinæ muscles. This deformity must not be confounded with that of rickets or of syringomyelia, both of which sometimes produce lateral curvature of the spine. There is also a hemiplegia of cerebral origin that is encountered among infants, but the paralysed muscles in this variety of hemiplegia are contractured instead of being flaccid as in poliomyelitis. Syphilitic children sometimes exhibit a motionless limb in which the paralysis is due to a separation of the epiphysis from the diaphysis of the bones, and is independent of any spinal lesion. Occasionally, after difficult labour and application of the obstetrical forceps, paralysis of the limbs results from compression of portions of the motor zone in the cerebrum. In such instances the history of the case, and the limitation of paralysis to those groups of muscles that are connected with the injured portion of the brain, serve to distinguish them from the spinal disease which comes on after birth, and is accompanied by the symptoms of an acute, febrile infection.—*The Clinical Review, October*, 1899.

## 32.—THE ELECTRICAL TREATMENT OF INFANTILE PARALYSIS.

By H. Lewis Jones, M.D., F.R.C.P.

[The following is taken from Dr. Jones' article on Notes from the Electrical Department of St. Bartholomew's Hospital.]

The treatment of infantile paralysis by electricity, extended over long periods of time, has been a special feature of the department ever since I commenced work there eight years ago. A fair number of these children have been in attendance for as much as two years, and some have attended for even longer. Of the advantages which result from the treatment there is no possible doubt. The cases we have most usually are of the lower limbs: improvement begins to be manifest within the first few weeks, and from this the parents get encouragement and persevere in their attendance. The regular way in which they come, in spite of the expense and trouble which are entailed in bringing their children to the hospital, is clear evidence that good results from it. The method of treatment now adopted, whenever possible, is by the sinusoidal current from the mains, applied in a bath. This simplifies the treatment while making it more thorough, and on Tuesdays and Fridays, the days for women and children, the nurse in the department is practically engaged as a bath-woman for the greater part of the afternoon. It is surprising to see how quietly the children bear the rather strong currents which are used. During the application they sit in the bath, and play with various floating toys in the most contented way. The best test of their progress is the measurement of the wasted limbs, and as most of them have paralysis with wasting of leg muscles, the girth of the leg at its widest part is the usual part measured. In the natural way of things, the children grow all over appreciably during the time over which treatment is continued; but the point desired is to obtain a greater percentage of growth in the paralysed limb as compared with its sound fellow. This I have constantly noticed, and it is a conclusive proof that improvement is taking place.

In infantile paralysis, which is a disease of all degrees of severity, the amount of recovery to be obtained by any treatment will depend upon the intensity of the original damage. A complete *restitutio ad integrum* cannot always be hoped for, but, on the other hand, it is rather uncommon for any muscle to be so hopelessly ruined as to be incapable of any improvement, and it is by systematic culture of its living remnant that one may in time rebuild enough to make the muscle serviceable to its owner. A muscle which is so weak as to be of no use to its possessor gets no exercise, and its atrophy tends to increase from the disuse; but if in any way it can be stimulated and brought up so as to become useful even in a minor degree, then, from its daily exercise and employment, the future becomes assured. The treatment of infantile paralysis hinges upon this. Given a remnant of muscle with a few living cornual cells to nourish it, and stimulation of that remnant by electricity, by passive movements, and by active movements will make it grow as the muscles of an athlete grow. It will thus become useful to its owner, and by small degrees will grow more and more, and its continued growth will be greatly helped by electricity. This I say because I wish to combat most strenuously the pernicious doctrine that a muscle affected by infantile paralysis needs no treatment. It has been laid down that treatment is unnecessary on the grounds that a muscle, if it can recover, will recover spontaneously, and if it cannot it is useless to treat it. This is wrong, illogical, and clearly based upon laziness. It is more correct to say that any muscle affected by infantile paralysis will be benefited by electrical treatment, that a very few will benefit very little, that most will benefit very greatly, and that some will recover completely. I have so often seen muscles left to themselves for years, and remaining in an unsatisfactory condition, which at once began to grow rapidly when electrically stimulated, that I wish to condemn with the greatest emphasis the policy of leaving such muscles alone. Providence helps those who help themselves. I will just mention one interesting point which, I think, supports my statements, and then pass on to something else. I have seen a case with total loss of muscular power and electrical reactions in the muscles of the calf improve under electricity with the gradual growth of firm new muscle, all of which was in the external head of the gastrocnemius, that being the only situation in which any living fibres had survived. —*Practitioner*, *September*, 1899.

## 33.—LUMBAR PUNCTURE.

By R. T. Williamson, M.D. Lond., M.R.C.P.

A survey of the numerous articles recently published, especially in Germany and Austria, will show that occasionally it is able to furnish useful information in diagnosis, and in very rare cases it is of value in treatment.

1. *Method of obtaining puncture fluid.*—The patient is placed on the left side with the lumbar vertebral column bent forwards. The interval between the third and fourth, or between the fourth and fifth lumbar vertebræ is sought, and the needle introduced. In children, the puncture is made in the middle line, in adults 1 cm. to the side. The needle is pushed upwards and towards the middle line until the resistance is felt to cease owing to its entrance into the subarachnoid space. The pressure of the fluid has frequently been measured by a mercurial manometer, but the results cannot be regarded as very important. The character of the fluid obtained by puncture, and the examination for micro-organisms sometimes furnish useful indications of the nature of the disease.

2. *Diagnostic value.*—Bacteriological examination is of most importance. Cover glass preparations may be stained and examined microscopically, or cultivations may be made from the puncture fluid. In purulent meningitis streptococci, staphylococci, the pneumonococcus and the meningococcus intracellularis (Jaeger-Weichselbaum) have been detected in the puncture fluid. In epidemic meningitis the organism found is usually the meningococcus intracellularis, but sometimes Fränkel's pneumonococcus is present. Unfortunately the results just mentioned are not constant in purulent meningitis, as in some cases of this disease the puncture fluid is clear and free both from leucocytes and organisms. In a case of acute poliomyelitis Schultze found the Jaeger-Weichselbaum's diplococcus in the puncture fluid. In tubercular meningitis the results have been more satisfactory than in other cases. Tubercle bacilli have been found in a considerable number of cases. The puncture fluid is usually clear; it may be turbid, but it is seldom hemorrhagic. On standing, usually a slight clot forms in which the tubercle bacilli may be found. Schwarz recommends 10 c.c. of the puncture fluid to be allowed to stand in a glass with pointed bottom for 24 hours, and the fine clot which forms should be examined for bacilli. In other cases it may be necessary to employ a centrifugal apparatus before examining for tubercle bacilli. The presence of tubercle bacilli is diagnostic of tubercular disease, but negative results do not exclude tuberculosis. Often the tubercle bacilli are scanty in the puncture fluid, but the procedure is undoubtedly of great value, since a positive result is diagnostic. Schwarz points out that often tubercle bacilli are only found towards the end of the disease. Lafleur reports a case presenting the symptoms of tubercular meningitis, in which the fluid removed by lumbar puncture produced tuberculosis when inoculated into a guinea pig. At a later date tubercle bacilli were found on examination of the fluid obtained by a second lumbar puncture. Purulent fluid, turbid fluid, or a fluid rich in leucocytes, indicate a purulent or a chronic inflammation (Goldscheider); in the tubercular meningitis, the fluid may be turbid, but it is seldom purulent or hemorrhagic. A clear puncture fluid, however, does not exclude purulent meningitis. The repeated occurrence of hemorrhagic fluid may be due to cerebral or spinal meningeal hemorrhage, or to a cerebral hemorrhage, bursting into the ventricle; or the presence of blood may be due to a vessel being punctured by the needle.

3. *Therapeutical results.*—Usually lumbar puncture has not caused any improvement in the various diseases in which it has been employed (*i.e.*, in cerebral tumour, abscess, in meningitis purulent and tubercular, &c.). But a survey of the records

published during the last three years shows that in one class of cases good results have been obtained. These are the somewhat indefinite clinical group of cases to which the name of "serous meningitis of the ventricles" or acute hydrocephalus of the adult is applied. The diagnosis during life is difficult, but the cases in which lumbar puncture has given favourable results have usually been those in which this condition has been suspected. Frequently the symptoms suggest cerebellar or cerebral tumour. Oppenheim, Fränkel, Peters, and Goldscheider have each recorded one case, and Leyden three cases in which the severe cerebral symptoms, apparently due to serous meningitis of the ventricles, diminished markedly after lumbar puncture. In the cases recorded by the three authors first mentioned recovery occurred. Leyden has also seen improvement in a case of hydrocephalus in a child. In a case reported by Oppenheim the symptoms consisted of headache, vomiting, ataxia, paralysis of ocular muscles, and optic neuritis. Lumbar puncture was followed by good results, and the patient had followed his employment for two years. The therapeutic value of lumbar puncture in cases of chronic hydrocephalus and serous meningitis has been carefully considered by Brasch, and six cases recorded. Three of these cases are reported as cured, and three improved, by lumbar puncture.

4. *Dangers of lumbar puncture.*—Occasionally in cerebral tumour (mostly in the posterior fossa) death has followed directly after lumbar puncture. But death may occur suddenly in advanced cases of cerebral or cerebellar tumour apart from lumbar puncture, and it is not surprising that lumbar puncture should cause death in a few cases where the growth is large. Occasionally lumbar puncture has caused an increase of the cerebral symptoms. If a nerve of the cauda equina should be punctured, there may be pain in the course of its distribution.

From the records of the last few years one may conclude, with regard to lumbar puncture:—(1) That it is sometimes justifiable for diagnostic or therapeutic purposes. (2) That its chief value in diagnosis is in cases of suspected tubercular meningitis. A positive result enables a diagnosis of tubercular diseases to be made with certainty. From negative results no conclusion can be drawn. (3) Therapeutically it appears to have been followed by good results, in a small number of cases, and these have usually been cases which have been suspected to be serous meningitis of the ventricles or acute hydrocephalus.—*From Dr. Williamson's paper in the Medical Chronicle, June,* 1899.

# DISEASES OF THE ORGANS OF CIRCULATION.

## 34.—THE VALUE OF THE PULSE IN DIAGNOSIS AND PROGNOSIS.

By Henry Jackson, M.D., Boston.

[The following is extracted from Dr. Jackson's paper.]

In acute tuberculosis we have a very different picture from that in typhoid; the pulse is rapid, averaging 120 or more, long before the patient reaches a critical stage of the disease. In typhoid fever the pulse may temporarily be 120, but it never remains for several days at this point unless the patient is severely sick, whereas in general tuberculosis we find great rapidity of the pulse for days, and even weeks, in a patient presenting no signs of immediate dissolution, often very comfortable and anxious to be up and about the room. The rapidity of the pulse in general tuberculosis is of much value, as in both diseases the course of the temperature may be similar; in both diseases there is an absence of leucocytosis, and often the general condition of the patient may leave us much in doubt, though in the one hebetude is usually much more marked than in the other. Of course, the Widal reaction in the one case, and tubercle bacilli in the other, may if present give us an absolute diagnosis. In cerebro-spinal and tubercular meningitis the pulse may be almost pathognomonic; in the early stages the pulse is slow in proportion to the general condition of the patient. If there is added to the slow rate an occasional intermittency, we have a still greater assurance that the pulse is dependent upon some direct pathological lesion, and can by no means be considered as an index that our patient is not seriously ill, as is suggested by his general condition. It is not an invariable rule that the pulse is slow in the early stages of meningeal trouble, but if not continuously slow we find that the rate varies much without any corresponding change in the condition of the patient and independently of the degree of the fever. The slow pulse is only seen in the early stages of meningitis, as later in the course of the disease, when the vagus has been paralysed by pressure or by disease of the nerve itself, we find an extremely rapid pulse. In cerebral hemorrhage the pulse may again be of great value. In alcoholism the pulse is rapid, in cerebral hemorrhage, slow; and hereby we may make our diagnosis.

Dr. Bowditch has recently called attention to the value of a rapid pulse in the diagnosis of early tubercular trouble. On the other hand, an extremely rapid pulse without evidence of serious disease may be suggestive of exophthalmic goitre, as in a case described to me in which later goitre developed. In many other diseases the pulse may assist us in forming our diagnosis, as for instance in the early diagnosis of acute follicular tonsillitis and diphtheria, the one usually associated with high fever and rapid pulse ; the other in the beginning often giving rise to only slight fever, while the pulse may not be markedly quickened unless toxæmia has already taken a severe hold upon the patient. In the prognosis of typhoid fever, we have in the pulse what I believe to be an infallible guide. In uncomplicated cases the rate of the pulse is slow relatively to the degree of the fever and the general condition of the patient. When the pulse is continuously rapid, the prognosis becomes proportionately grave with the increase in the rate, though no other alarming symptoms arise to render us doubtful as to the outcome of the case. Leaving out of consideration hemorrhage and perforation, a rapid pulse is an index that the patient is in danger of succumbing to the specific toxæmia produced by the disease. The pulse is to us an index of the effect upon the individual patient of the poison of the typhoid, and is of far greater value than any other one symptom or any group of signs or symptoms. In my early student days I read an article, I think by Dr. Wilson, of Philadelphia, stating that in typhoid fever the danger line was reached when the pulse registered 120; and all cases that I have seen since that day have only confirmed in my mind the great dependence to be placed upon this axiom. I have seen patients die who had only a rapid pulse as indicative of danger, while again and again I have seen patients recover where the pulse ran from 110 to 120, yet they were very stupid, had involuntary passage of urine and fæces, and perhaps frequent vomiting. I am so sure of my ground in this matter that in the individual case I dare to make a favourable prognosis if the pulse is slow, no matter how unfavourable the other symptoms may be. On the other hand, a rapid pulse, independent of any complication, as hemorrhage or pneumonia, causes me great anxiety. Of course many cases recover when the pulse is rapid, but not without a severe struggle for life. The remarks which I make as to the prognosis in typhoid do not refer to cases complicated by intermittent diseases or by perforation and hemorrhage. In such instances the value of the pulse lies rather in diagnosis than in prognosis. A sudden rise of the pulse without apparent cause suggests hemorrhage, especially if accompanied by a fall in the temperature.

In perforation the pulse is also of the greatest value. The pulse may be rapid in typhoid fever in other complications, as otitis media and phlebitis, without rendering the prognosis unfavourable; whereas in acute inflammation of the parotid the prognosis is grave, more so, I think, than when pneumonia or pleurisy is the complicating pathological factor. In convalescence the pulse is often rapid, and then of no serious import. I have once seen a slow but very poor pulse in typhoid in a man that was seriously sick; examination of the heart showed that the pulse was not a sufficient index of the action of the heart, in that many beats were feeble and inefficient that the wave was not transmitted to the wrist.—*Boston Medical and Surgical Journal*, *August* 17, 1899.

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## 35.—ON CARDIAC STRAIN IN ADOLESCENCE AND IN MIDDLE AGE.

By I. Burney Yeo, M.D., F.R.C.P.,

Senior Physician to King's College Hospital, and Professor of Medicine in King's College, London.

[The following is taken from Dr. Yeo's paper.]

I need not dwell on the causes of those conditions of strain in heart and lungs, as we observe them in young men. They are well known, and are chiefly, too great devotion to athletic sports and violent physical exercises; and, so far as the heart is concerned, we must add as causes, sexual excesses and the use of tobacco. Perhaps one of the most fruitful causes of cardiac strain in young men is the occasional return to athletic exercises and competitions, after they have settled down to some more or less sedentary occupation. The mania which seems to seize young men to engage once a week in violent muscular exertion, after perhaps six days spent in a city office, is a fruitful source of cardiac and pulmonary strain. The worst of it is that these exercises are often mistakenly regarded as a means of promoting health, and as sanctioned by medical science. I have seen some rather alarming instances of the combined influence of over-exertion and tobacco-smoking in producing cardiac strain and fatigue, such as recurrent attacks of faintness and giddiness, persistent headaches, attacks of palpitation and dyspnœa, and great muscular fatigue and languor. If you examine the heart under these circumstances, you will usually find evidences of dilatation, especially of the right heart, and not infrequently a systolic murmur over the mitral area. I have seen such a murmur disappear in a week on complete relinquishment of tobacco-smoking; I have seen the attacks of fainting entirely disappear after a longer abstention from tobacco, and the general health and muscular energy be restored.

The treatment of such cases is simple. It consists in the avoidance of all muscular effort and strain (moderate and regular exercise may, however, be permitted), an increase of the hours of rest in bed or in the recumbent position (this is a very essential point, especially in tall people), the relinquishment of tobacco, the avoidance of sexual excitement, the usual tonic remedies. Occasionally, in these cases of cardiac and pulmonary strain in young people, you will find slight attacks of hæmoptysis occur. The actual quantity of blood expectorated is usually small, but it often gives rise to a good deal of alarm, and it is rare that the term "incipient phthisis" is not applied to these cases by some one! The blood probably comes from dilated capillaries in the bronchial mucous membrane. It is in these cases that a sea voyage is often recommended, and it is certainly one of the best means of resting and restoring a strained and fatigued heart. The enforced rest and limited scope for exercise incident to a sea voyage is just what is needed.

Finally, I would call attention very briefly to cardiac strain, as it occurs in middle age. Now, the occurrence of cardiac strain in middle age is greatly to the fact that men (for it is chiefly in the male sex that this occurs) are slow to realise the changes that the progress of years bring in their train. A man may feel as strong, or he may think himself as strong, between the ages of 45 and 50, as ever he was. But we know well that for the average man changes of a degenerative kind are imminent if they have not actually begun. His teeth, his hair, his skin, his eyes are not exactly what they were at five-and-twenty. I am speaking of the average man, not of the exceptional one. His digestion often begins, about this period, to give him some trouble. He finds he cannot digest and assimilate the same amount and the same kind of food as formerly. If he wisely attends to those indications and makes certain appropriate changes in his diet and mode of feeding, and accommodates himself to inevitable alterations in his digestive capacities, things go well and his health is maintained. But if he resents these interferences with his food habits, and persists in the régime which was suitable enough to younger organs and younger activities, he comes to grief in various ways. It is the same with the heart and lungs. They will not bear with impunity the same strain that they have borne in youth, and if, notwithstanding, the same efforts are imposed upon them, they yield to the strain—in short, they become dilated and strained, and their functions are impaired. For the tendency to emphysematous dilatation of the air cells, which is prone to occur at this period, the late Dr. Wilson Fox had a good expression,—he said "the lungs were getting grey"!

It is to the prevailing indisposition to recognise these changes that most of the cases of cardiac strain in middle life are due. Men will continue to climb in the Alps, to take part in athletic games and contests, and generally to attempt an amount and kind of physical activity for which they are no longer well fitted. The exceptional organisation does this with impunity, and thereby becomes a snare to his weaker brother. To these patients we should preach the gospel of rest. Exercise should be gentle, not forced to fatigue. An open-air life is good, provided they are content to sit, or lounge, or stroll about in it. Then the digestive organs must be carefully considered—their labours must also be lightened. Foods of a light and easily digestible form should be taken—pounded meat, chickens, soles, vegetables reduced to *purées*, thin dry toast in place of quantities of new doughy bread. Plenty of time should be given to meals, and good adequate intervals allowed between them. Rest, refreshing rest, must be allowed to the tired stomach as well as to other organs. If anything is needed between meals, to relieve what is usually described as a "sinking" feeling, nothing is better than a teaspoonful of beef-essence or beef-juice in a teacupful of hot water. Alcoholic stimulants should be taken very sparingly. The best tonic is a combination of strychnine and iron, or the former alone if the latter is not well borne.—*Edinburgh Medical Journal, July*, 1899.

## 36.—TACHYCARDIA.

By J. Magee Finny, M.D.,
Physician, Sir P. Dun's Hospital, &c.

[The following is taken from Dr. Finny's paper :]

One of the great distinguishing peculiarities of *pathological* as contrasted with *symptomatic* tachycardia, is the little disturbance it gives to the sufferer. It may be so slight that the patient goes about his duties as "unconscious as a babe of anything unusual" (Balfour), or there may be some slight sense of oppression, some nervous excitement or dyspnœa, or a little lividity. Thus, it is more a state of altered rate of the heart's action, not a disease of the heart, and as it occurs in paroxysms, Bouveret gave it the name of "Paroxysmal Tachycardia." It is induced by no known cause, although attributed to, and seemingly produced by, excess of tobacco, a fall, a blow, or reflexly by indigestion, worms, nasal polypi, urinary calculi, &c. Larcena classifies the causes of tachycardia under eight headings, as given in Whittaker's exhaustive article :—(1) In diseases of the heart and blood-vessels ; (2) febrile ; (3) peripheric compression of one or both vagi or their nucleus ; (4) organic diseases of the nervous system ; (5) general diseases—*e.g.*, typhoid, diphtheria, &c. ; (6) toxic—*e.g.*, alcohol, &c. ; (7) reflex, from any organ ; (8) neurosis.

Tachycardia may occur at any period of life—from 70 years of age (Balfour) to 6 years. This latter I will mention, as it is the youngest case on record, and the most recent, as far as I can discover (described by Herringham). It was a child of 11, who for five years previously had had sudden attacks of heart-hurry without cause, and lasting 36 hours to 13 days, subsiding during sleep. The pulse-rate ranged during the attack from 240-260. There was very little præcordial discomfort ; no pain ; respirations were accelerated, with slight cyanosis, but no anasarca or pulmonary œdema. There was no evidence of cardiac disease, except enlargement of the organ in the transverse direction both in the intervals and still more during the attack. The child had been, previous to the first attack, in robust health, and the history pointed to an absence of rheumatism or syphilis. Different forms of treatment, based on various theories as to the cause of the tachycardia, were tried, but had no effect in checking or alleviating the attacks. In one of Bristowe's cases the paroxysms of recurrent tachycardia were of some years' duration—the attacks lasting three days, in another they lasted five weeks. In the intervals, some patients enjoyed perfect health, others were invalids—and one was actively employed as a governess, with much responsibility, aged forty, who travelled about inspecting schools, while her heart was beating 200-260 (average 216). After five weeks the heart suddenly fell to 70-80, and for fifteen years these paroxysms would recur with very little general distress or discomfort. In the end this lady died with symptoms of cardiac obstruction. There was no autopsy.

[The author then gives details of two cases occurring in women, aged respectively 68 and 54 years.] These two cases illustrate recurrent or paroxysmal tachycardia—one in a case of pre-existent and permanent organic valvular and arterial disease; the other in an organ apparently healthy, and yet neither to be attributed to direct cardiac lesion nor followed by heart failure.

In striking contrast I now refer to another case, occurring in a previously healthy female, aged 23 years, where the tachycardia was persistent for 16 days, where its cause seemed to be obscurely due to an acute febrile state, and where its termination was fatal on 16th day by almost universal arterial thrombosis, and by gangrene of both lower extremities. [The details of the case are omitted.]

My idea—it is but hypothetical—is that the primary fever and sore throat in the third case were of either a diphtheritic or influenzal nature; and that the "heart-hurry" was the result of toxic infection of the cardiac ganglia; that owing to the same toxic influences—as we see in diphtheria and fevers—the muscle of the heart became weakened, and the thrombi in the auricles and ventricles becoming detached caused embolism of the various arteries throughout the body, and, in particular, of the iliac and femoral arteries, which led to gangrene of both legs. There was no valvular lesion and no disease of the myocardium. The number of cases of paroxysmal tachycardia which ended fatally are very few, and those in which post-mortem results are published still fewer. All observers seem to think that permanent tachycardia is a forerunner of graver cardiac lesions. It can never be looked upon as a favourable sign, as it signifies arrest of the heart's action, and leaves to be feared the development of symptoms of weakness and exhaustion. I can find no record of any case of tachycardia in which gangrene of the extremities occurred.—*Dublin Medical Journal*, *July*, 1899.

## 37.—TREATMENT OF THE RAPID HEART OF INFLUENZA.

By A. Ernest Sansom, M.D., F.R.C.P.,
Physician to the London Hospital.

[The following is taken from Dr. Sansom's paper on the "Effects of Influenza upon the Heart and Circulation."]

In the first place, I think one should acknowledge failures. I do not know of any drug treatment that can be relied upon to reduce the abnormal rapidity of the heart's action. Digitalis and all such cardiac tonics fail completely. The only conditions in this category in which digitalis is useful is where there is a cardiac dilatation which lasts some weeks, for in the acute forms of dilatation it is inert or harmful. Then it should, I think, be given in full doses—from 10 to 20 minims of the tincture or half a drachm of the infusion or one grain of the powdered leaves—three times a day for three days with intervals of three or more days in which the drug is withheld; or the alkaloid digitalin, two to four granules of Nativelle's each containing one-tenth of a milligramme of the crystallised digitalin, may be administered once in 24 hours for two days consecutively with intervals of at least three days; or a hypodermic injection of a solution of two of the gelatin discs (Savory and Moore) containing $\frac{1}{100}$ grain of digitalin each may be made daily for not more than three consecutive days. The intermittent administration of digitalis or digitalin is, I think, much to be preferred to the continuous. No drug, I think, should be continuously administered which tends to increase the intra-arterial tension or to excite the heart. Iron preparations are generally ill borne. Small doses of arsenic—from three to five minims of Fowler's solution well diluted—administered three times a day constitute the best tonic treatment. Alcohol in forms and doses that quicken the already excited heart is generally to be avoided. At any rate, Champagne and Burgundy, I feel sure, do much harm; whilst Bordeaux claret and the still Moselles are permissible. A simple diet of which milk is a cosiderable item is the best.

The only treatment of the persistently rapid heart which has reasonable probability of success is, in my opinion, the administration of weak continuous galvanic currents through the course of the pneumogastric nerves as recommended by the late Mr. Cardew. The current should be of from two to four milliampères (from six to 10 of Schall's cells), the anode, well moistened, being applied to the nape of the neck and the kathode, also moistened, in the groove in the neck between the sterno-mastoid muscle and the thyroid cartilage. The administration should be for six minutes and three times a day, the course of the right and the left pneumogastric being treated on alternate occasions. Any good influence from the treatment is manifested very slowly. Improvement rarely begins until the treatment has been pursued for six months, but the recoveries which I have witnessed have been very satisfactory.

In the cases accompanied by any or all of the signs of Graves's disease I have found treatment by thyroid gland, thymus gland, or suprarenal capsules (or any preparations of them) quite useless. Yet in the minority of cases in which there was decided enlargement of the thyroid the application of ice-bags over the swollen gland or the frequent sponging with cold sea-salt water appeared to be followed by much benefit. I can find time on this occasion only very briefly to advert to the treatment of the cases of paroxysmal tachycardia and of palpitations occurring with vagus storms. The one chief indication is to train the patient into conditions of comfort. For the insomnia which occurs in a large proportion of the cases I think the best treatment is a nightly draught containing from 20 to 30 grains of sodium bromide together with a cachet containing 10 grains of chloralamid. A second dose of 10 grains of chloralamid may be given during the night if sleeplessness persists. In some cases trional agrees better than the chloralamid. It is best to avoid preparations of opium or morphia, but sleep must be procured by these in some cases for limited periods.

For the treatment of the cases accompanied by dyspepsia I think the alkaline carbonates are the most useful. In the cases of paroxysmal palpitation of heart-discomfort or of any form of vagus storm the patient should be provided with an agent which gives comfort at the very beginning of an attack, at the slightest warning that a paroxysm is impending. In many cases I have found nothing better, certainly nothing so innocuous, as phenactin. I generally prescribe a wafer cachet containing eight grains of phenacetin and one of camphor. This is to be swallowed after having been moistened by a mouthful of water directly discomfort is experienced. If the symptoms are unrelieved in half an hour or an hour, a second cachet is to be taken. In some cases antipyrin, in 15-grain doses, dissolved in water, is more effectual than phenacetin. If either of these drugs control the symptoms there is a good moral effect upon the patient. He feels that he has a trustworthy remedy at hand and he succeeds in reducing an intolerable discomfort in course of time to reasonable comfort.—*Lancet, October* 21, 1899.

## 38.—MITRAL STENOSIS.

### By JOHN LINDSAY STEVEN, M.D.,

Physician and Lecturer on Clinical Medicine in the Glasgow Royal Infirmary.

[The following is taken from a clinical lecture by Dr. Steven. The details of the cases are omitted here.]

*Case 1.*—Mitral stenosis of long standing—Frequent hæmoptyses during pregnancies—Thrombosis of right innominate vein and of uterine veins—Embolism of pulmonary artery—Death sixteen days after miscarriage during sixth pregnancy.

*Case 2.*—Mitral stenosis of rheumatic origin—Three of six pregnancies after onset of cardiac disease—Infarctions of lungs and kidney—Complete embolic blocking of right middle cerebral artery—Extensive brown softening of brain.

*Case 3.*—Mitral stenosis of long standing, with extreme orthopnœa during five months of residence in hospital, and terminating in fatal hemorrhage from the lungs.

The first two cases illustrate the influence of mitral stenosis on pregnancy and parturition. Our first patient had been six times pregnant. All her pregnancies went to term except the last one, which ended in miscarriage at the sixth month, sixteen days after which she died, the post-mortem revealing subinvolution of the uterus and thrombosis of the uterine veins. There can be little doubt, I think, that in this case the mitral disease had existed from childhood, and yet she was naturally delivered five times, and that notwithstanding the fact that she suffered severely from hæmoptysis during her third and fourth pregnancies. This case certainly teaches that safe delivery at term is at least not incompatible with the presence of tolerably severe mitral stenosis. The danger arises when compensation has seriously failed.

Our second patient had also been pregnant six times, and it is of interest in this connection, because we can be almost certain that three of the pregnancies occurred before the lesion of the mitral valve had commenced, and three of them after it had become diseased. Her first three pregnancies were normal in every way. Of the last three, which took place after her rheumatic fever in 1891, the fifth and sixth terminated in abortion about the third month. The last abortion, however, took place nine months before her admission to the infirmary, and for three or four months after it she enjoyed comparatively good health. The late Dr. Angus Macdonald writes, "A very special tendency to abortion or premature labour is clearly demonstrated with all these patients. Very few of them, indeed, are found to carry their children to the full time." Case 2 certainly supports this contention, but like that of Case 1, it also shows that the occurrence of pregnancy, even with well-marked mitral stenosis, need not lead to a fatal issue. I do not see in Macdonald's summary that he makes any special mention of a tendency to hemorrhage from the uterus as the result of mitral stenosis, but the clinical histories of both of our cases show that this is a complication to be guarded against. "We see, also," says Macdonald, "that there is no proved instance of death from embolism among the cases." In Case 1, however, the extreme pulmonary embolism cannot be excluded as a factor in the causation of the fatal event.

One of the commonest symptoms of mitral stenosis is hæmoptysis, and this is illustrated by all of our three cases. In the first two it was of the ordinary type, and the only point requiring further comment in connection with them is the tendency to periodicity in Case 1. In her case the hæmoptysis generally occurred when she was pregnant, and then at monthly intervals, a somewhat curious circumstance. In connection with the third case, the striking feature of the hæmoptysis was its exceedingly profuse character, so profuse, indeed, that we may say it was the immediate cause of the fatal issue. No treatment had any effect upon it, and the lad practically died of hemorrhage. Embolism is likewise a frequent complication of mitral stenosis, and was present in two of our cases, 1 and 2. In

Case 1 there was a very large embolic plug in one of the primary branches of the left pulmonary artery. This, however, was not directly connected with the mitral disease, but was rather, I think, the result of the thrombosis of the uterine veins. In Case 2 there were also pulmonary embolisms in both lungs, but these were derived from small thrombi in the dilated right ventricle and auricle. In her case, however, the most important embolic process was that which had occurred in the right middle cerebral artery. This, as has been pointed out, had led to very extensive softening of the brain. Such a complication is a frequent one in cases of mitral stenosis, and there was no difficulty as to diagnosis in connection with it. Indeed, in Case 2, after her attack of pain in the splenic region on Feb. 25, I frequently, in the ward visits, directed attention to the possibility of embolism taking place. It is almost certain now that this attack of pain was due to one of the pulmonary infarcts, as no evidence of embolism of the spleen was found at the post-mortem. You will remember that an infarction was also found in the right kidney, but although we carefully watched the urine for traces of blood, no evidence of its occurrence was obtained during life.

Thrombosis of the innominate and subclavian veins is, in my experience, a much less frequent complication of mitral stenosis. In Case 1 it occurred, and led to great œdema of the right arm. In this case there can be little doubt that the recent abortion and loss of blood from the uterus had rendered such an accident as venous thrombosis much more likely to occur ; but, strange to say, in the male ward at the same time there was a man suffering from an almost similar condition of œdema of the right arm. We had no opportunity in this case of verifying the diagnosis by post-mortem examination, but that it was due to thrombosis was rendered almost certain by our being able to feel that the external jugular vein on the right side was absolutely blocked in almost its whole extent. I do not remember to have seen a similar thrombosis in any former case of stenosis of the mitral orifice.

The auricular-systolic or presystolic murmur in the mitral area is admitted by all, whatever view may be taken as to the mechanism of its production, to be the most usual auscultatory sign of the presence of stenosis of the mitral orifice. It was characteristically present in two of our cases. It is a peculiarity of this murmur, frequently met with, that it may come and go. In our third case no typical auricular systolic murmur was ever heard, but in the third left interspace a ventricular systolic murmur was frequently noted. I believe with many others that a ventricular systolic murmur, or at least a murmur in the long pause, audible in the mitral or pulmonic area, is a frequent sign of mitral stenosis.—*Glasgow Medical Journal*, *June*, 1899.

## 39.—MYOCARDITIS.

### By M. Huchard.

At the Medical Congress held at Lille, M. Huchard read a paper on the different forms of myocarditis. He said that one should be on guard against the present tendency of diagnosing myocarditis where it did not in reality exist. Simple troubles in the innervation of the heart, disturbance of the cardiac rhythm of reflex order, modifications in the arterial tension, auriculo-ventricular thrombosis could lead the inexperienced to suppose the existence of myocarditis in the course of such infectious maladies as typhoid fever or influenza. But if abuse was frequently made of the term of acute myocarditis the study of the chronic form was generally overlooked and gave rise to errors of considerable importance.

Sclerosis in patches or arterio-sclerosis of the heart was characterised by degenerative lesions occupying the territory of a stenosed artery, and ending in dystrophic sclerosis, the ultimate term of a trouble of nutrition due to ischæmia. Those patches might be very small and disseminated, consequently stricture of the coronary arteries should be sought for. If those patches involved a large extent of the walls of the heart, a large vessel had been obliterated. In such case, the heart, voluminous, assumes a globular form. General dilatation of the ventricle, or partial dilatation (aneurysm of the heart) might result. At the seat of the sclerosis there was always to be found atrophy of the wall, frequently resulting in rupture of the heart. In diffuse sclerosis, chronic instertitial myocarditis, rings of sclerosis surround directly the artery, and progresses in destroying the cardiac fibres; the arteries were not the seat of obliterating endarteritis, but rather that of irritation of the peri artery, terminating in thickness of the vessel. The microscopic appearance of the heart was also different, the organ frequently enormous and kept its conical form without dilatation of the cavities or atrophy of the wall. Senile sclerosis was the terminal point of cardiac lesions exclusively provoked by the progressive disintegration of the elements of the organ by reason of the advanced age of the individual. The cardiac fibre underwent senile atrophy, whilst the fibrilla of the conjunctive tissue took its place to fill the empty spaces.

Three principal clinical forms of cardio-sclerosis might be admitted—painful or cardiac stenosis, arhythmic and tachycardic, myovalvular. The arhythmic form was characterised either by intermittent attacks of arhythmia or by a sort of cardiac folly which could persist six, ten, or even fifteen years as the only symptom. It was generally unaffected by digitalis. In the myovalvular type a murmur of insufficiency of the orifice could be heard due to sclero atheroma of the valve. A phenomenon appearing generally at the *début* of arterial cardiopathy was the toxi-alimentary dyspnœa. That dyspnœa proved the existence of renal insufficiency even in the absence of albumen, and yielded to milk and vegetable diet. Death in arterio-sclerosis of the heart could be sudden, by syncope or by angina pectoris. It could be rapid either from rupture of the aneurysm of one of the coronary arteries in the pericardium or from rupture of the heart itself, or it might result from acute œdema of the lungs, uræmic trouble, hemorrhage, or cerebral softening. On the contrary, the fatal termination might arrive slowly by asystolia, cardiac thrombosis, or from arterial cachexia, characterised by general emaciation and pallor of the face.

As to the treatment of cardiac sclerosis, the fundamental principle was to ease the organ by attenuating the peripheric resistances. Diuretic drinks, notably milk and certain mineral waters, should be prescribed, while tea, coffee, liquors, pure wine, should be suppressed. Aliments containing a great deal of ptomaines, meat, preserves, fish, cheese, &c., should be forbidden. Abuse should not be made of drugs; theobromine was an excellent diuretic, while saline purgatives might be given with advantage. As a vaso-dilator nitro-glycerine rendered good services given in solution (1 per cent.) during twenty days a month, in increasing doses of from 4 to 20 drops daily. During the remaining ten days of the month iodide of sodium might be prescribed.—*From report in the Medical News, August* 9, 1899.

## 40.—MERCURY IN DISEASES OF THE HEART.

By Wallace Beatty, M.D., F.R.C.P. I.,
Physician to the Adelaide Hospital.

[The following is taken from Dr. Beatty's paper.]

*The cases in which mercury is of real value.*—(1) Of all conditions in which mercury is useful the one in which it is most certain to do good is this—general venous engorgement due to chronic primary mitral valve disease. In a typical case there is a rapid, irregular, compressible pulse, physical signs of dilatation of heart, a regurgitant or obstructive mitral murmur, full and pulsating cervical veins, an enlarged, conjested liver, high coloured, scanty, and albuminous urine from conjested kidneys, anasarca, and perhaps some ascites; in short, all the evidences of back pressure. (2) The cases of general venous engorgement dependent upon mitral incompetence (relative incompetence) secondary to old-standing aortic regurgitation. (3) Cases of dilatation of the heart with general dropsy, but yet not obvious valvular disease, there being no murmur and no evidence of kidney disease. (4) Cases of general venous engorgement from failure of the right heart, caused by severe emphysema and bronchitis. (5) Cases of general venous engorgement due to cardiac dilatation following upon long-continued hypertrophy of the left ventricle, due to chronic interstitial nephritis. In all these cases there is general venous congestion due to back pressure, and it is in such conditions of the heart that mercury proves most valuable.

*The modes of its administration.*—If we select a typical case of general venous congestion dependent on failure of compensation in chronic mitral valve disease, there are four principal ways in which we may hope to relieve the heart and remove the congestion. (1) By increasing the power of the heart (digitalis, squill, strophanthus, and strychnine are the most generally useful to effect this object). (2) By diaphoretics. (3) By purgatives. (4) By diuretics.

Diaphoresis is of very limited usefulness; in severe cases the patient has orthopnœa, and the administration, *e.g.*, of hot air baths to cause sweating is not readily manageable. Pilocarpine is a depressing and sometimes dangerous remedy. The depression likely to ensue from diaphoresis, and especially the fact that it can at most only give very temporary relief to the loaded veins, are limits to its possible usefulness. With regard to purgatives: If the patient is strong it is well to commence treatment by free purgation, and repeat the purgation every two or three days. Many patients are, however, too weak to bear purgatives, and we must then rely upon cardiac tonics and upon diuretics. The advantages of diuretics are—their action is continuous, and is not attended with the depressing effect which follows upon diaphoretics or purgatives. Our main reliance must, therefore, be placed upon heart tonics and diuretics—in both the action is continuous. I leave out of consideration such special treatment as bleeding, puncture, &c.; also the questions of rest, diet, stimulants, as my object is to dwell solely upon the uses and action of mercury.

Mercury is administered in heart disease for both its purgative action and its diuretic action. Most physicians use mercury in purgative doses or combined with other purgatives, giving it occasionally in the course of other treatment. It is thus mercury is administered by Sir William Broadbent.

Mercury may be administered almost or exclusively for its diuretic action, in small doses frequently repeated, and this is the method which has proved most successful in my hands. The plan I adopt is as follows:—I give a pill containing half a grain of calomel usually along with digitalis and squill, every four hours night and day, for from 10 to 14 days. If these pills should tend to cause purgation I give them combined with opium. I commonly order two sets of pills—one set containing calomel half a grain with squill and digitalis, the other set containing the same together with one-eighth to half a grain of powdered opium. The nurse is directed to give a pill every four hours either with or without the opium, according to circumstances; one or two motions in the 24 hours is all I think well to allow. It often happens that very few or even no opium pills are needed during the period of the administration of the mercury. After five or six days an improvement in the condition of the patient generally shows itself, or, if not so soon, in about eight days, when free flow of urine, as much as 100 ounces in the 24 hours, and a concurrent subsidence of the dropsy manifest themselves. In the next few days the symptoms of general venous engorgement diminish rapidly. At the end of about 14 days the gums may be a little sore; I then stop the mercury and order iron (generally citrate of iron and ammonia) combined or not with digitalis, according to the condition of the pulse. Once the dropsy has disappeared entirely or almost entirely, the amount of urine secreted falls to, or almost to, the normal. This method of administering mercury, relying on its diuretic action solely, is specially useful in feeble patients, who would be exhausted by frequent purgation, and though at the end of a mercurial course some patients may feel weak, they will be relieved of their distressing symptoms, and after some days' use of iron, &c., the strength rapidly returns. This treatment may be repeated again and again every now and then when recurrences of general venous congestion manifest themselves, and again and again complete relief of longer or shorter duration may be obtained. In this connection I may mention the case of a lady who was under my care several years ago suffering from mitral regurgitation, enormous dilatation of the heart, and general venous congestion, with very marked anasarca. I treated her for several days with Baillie's pill (blue pill, squill and digitalis), and was disappointed to find no improvement in her condition. Dr. Head then saw her with me. He remarked, "For this case blue pill is too slow; change it to calomel." After a few days' treatment with calomel the dropsy disappeared, and a course of iron was followed by some weeks of comparative ease; she was able to go out on fine days. Again and again when the circulation became embarrassed the mercurial course was resorted to, followed by a course of iron and digitalis, and again and again the treatment was followed by relief. She lived for about two years. It is interesting to note that the marked dropsy of the lower extremities which was present in her first attack never recurred, but the back pressure was almost entirely directed into the liver, which, with each attack, became swollen to an enormous size.

One other case I may allude to. An old gentleman of about 80 years of age, suffering from mitral regurgitation with enormously dilated heart, who had been treated with digitalis, occasional purgative doses of calomel, and nightly hypodermic injections of morphia, was completely relieved of his symptoms for a time by a course of calomel given every four hours. He lived for about two years, and never again required morphia for rest and sleep at night. Every now and then he resorted to the calomel course. In this case the complete relief afforded by a course of frequently-repeated doses of calomel, contrasted with the failure of occasional purgative doses, was very remarkable.

We may, of course, meet with some cases in which mercury is not well borne, but these are very exceptional : of course a time comes when mercury fails. The state of the pulse will determine whether mercury is to be given alone or in conjunction with digitalis and squill ; most commonly it is best given in combination, and mercury would appear to act as an adjuvant to digitalis, the action of the digitalis being aided by the diuretic effect of mercury.

Mercury acts well in the other conditions mentioned in the early part of this communication, and I prefer generally to administer it in the same way as in primary mitral valve disease with general venous congestion. I need not allude to the treatment of these conditions, except to the cases of dilatation of the heart secondary to hypertrophy of the left ventrical which occurs in chronic Bright's disease. When the heart begins to fail and dilatation occurs in chronic interstitial nephritis, and the symptoms of general venous congestion from back pressure make themselves manifest (a desperate case indeed), mercury often acts extremely well, and though one cannot look forward with the confidence that one may in primary cardiac disease to a good result, still a temporary good result often is effected. In this complication of Bright's disease mercury is certainly not contraindicated.

In conclusion, I do not wish to be understood to advocate mercury in every case of mitral valve disease with symptoms of imperfect compensation. In many cases occasional resort to digitalis and other cardiac tonics is sufficient to restore the deranged circulation ; but when digitalis and other cardiac tonics fail, the use of mercury is often attended with the happiest results. I have dwelt, accordingly, at length upon the action of mercury in chronic heart disease, because I wish to bear my testimony to its immense usefulness, and because I wish to emphasise the fact that while in some cases it may be administered with advantage in occasional purgative doses, in a large number it is best and most successfully given in small, frequently-repeated doses for about a fortnight at a time, with the object of causing free diuresis, any tendency to purgation being kept in check by combining the mercury with opium.—*The Dublin Journal of Medical Science, October*, 1899.

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# DISEASES OF THE ORGANS OF RESPIRATION.

## 41.—BENIGN LARYNGEAL TUMOURS.

By John M. Ingersoll, A.M., M.D.,

Cleveland, Ohio ; Chief of the Nose, Throat and Ear Clinic, Lake Side Hospital.

[Some of the details of the cases are omitted here.]

Papillomata of the larynx are not rare. They occur more frequently than all other kinds of tumours of the larynx combined. Fibromata are second in order of frequency, but are comparatively rare. Papillomata may occur as a single warty, cauliflower-like tumour, or like warts on any other part of the body ; there may be several of them located in different portions of the larynx, but a growth in the posterior part of the larynx should always suggest the possibility of syphilis or malignancy. They are usually situated in the anterior part of the larynx and more frequently develop on the anterior half of the vocal cord than on any other portion of the larynx. They may occur congenitally, and are then usually associated with hypertrophy of the faucial tonsils or Luschka's tonsil or both ; they may also be developed by the laryngeal irritation caused by mouth-breathing in children with adenoids or enlarged faucial tonsils, and in such cases they usually disappear when the adenoids and tonsils are properly treated. Papillomata of the larynx in children are, however, comparatively rare. The etiology is difficult to determine ; laryngeal strain or excessive use of the voice in speaking or singing may cause them, but they frequently develop in persons who use their voice very moderately and a few cases have been reported in deaf-mutes. The pathology consists of hypertrophic changes in the papillæ with a proliferation of epithelial cells forming small round projections. Fibroma of the larynx usually occurs as a single tumour, though the development of one on the edge of the vocal cord may cause a similar growth on the opposite cord. Their etiology is uncertain. They are composed of a mass of dense connective tissue, scantily supplied with blood vessels, and usually present a rather round, smooth surface covered with mucous membrane.

The symptoms caused by papillomata and fibromata are similar, and consist of a sense of fullness or discomfort in the larynx; cough is frequently complained of. The interference with phonation is purely mechanical and is dependent upon the size and location of the growth and varies from slight hoarseness to complete aphonia. Spasm of the larynx sometimes occurs. If the tumour is large, it will interfere with respiration, particularly upon exertion.

It is the intent of this paper to report three cases of laryngeal papillomata and three of fibromata, which it has been my good fortune to see and treat during the past year.

*Case* 1.—In a boy aged six years. The larynx was almost completely filled by a large, irregular, cauliflower-like tumour, covering the right vocal cord entirely and the anterior two-thirds of the left cord. The diagnosis of papilloma was made from the macroscopic appearance of the tumour and intra-laryngeal operation advised. Owing to the age of the child and his consequent lack of comprehension of how he could aid the operator by holding his head in the proper position and protruding his tongue as far as possible, the difficulties of the intra-laryngeal operation were greatly increased, but in several sittings I succeeded in removing most of the tumour.

*Case* 2.—In a man aged 32 years, a well-nourished and healthy man; history negative. A slight hoarseness, which began five months previous, without any apparent cause, was the first indication that he had any laryngeal trouble. The hoarseness had steadily increased and was accompanied by a tickling sensation and cough; otherwise he felt perfectly well. The whole respiratory tract, with the exception of the larynx, was normal. On the left vocal cord, at about its centre, there was an irregularly round cauliflower-like tumour about 0·5 cm. in diameter. The whole larynx was slightly inflamed. The tumour was removed with the double curette and the base cauterised with chromic acid.

*Case* 3.—In a man aged 45 years. On the anterior part of the left vocal cord there was an irregularly oval warty-like tumour, covering the anterior third of the cord and extending over a small part of the right cord. A piece of the tumour was removed and the microscopical examination showed it to be papilloma. In two sittings the tumour was all removed except a very small piece on the extreme anterior end of the left cord, and as all symptoms of irritation and cough had disappeared, the patient refused to have anything more done, although I assured him that it would probably recur if left in that condition. Four months later the patient came to me again, as he was beginning to have a return of his former symptoms. A laryngeal examination showed that the papilloma was recurring. At present he refuses to have anything done, except local application (zinc chloride or alcohol), which gives him considerable temporary relief.

*Case* 4.—In a woman aged 32 years, general history good. On the free edge of the right vocal cord, at almost its centre, there was a small, round, smooth tumour, about 2.5 mm. in diameter. The tumour was removed with the double curette and examined microscopically; it proved to be a fibroma.

*Case* 5.—In a woman aged 18. On the right vocal cord, at about its centre, there was a firm, round tumour, 1·5 mm. in diameter; directly opposite, on the left cord, there was a thickened spot, surrounded by an inflamed area. The tumour on the right cord was removed and proved microscopically to be a fibroma.

*Case* 6.—In a man aged 36 years. In the anterior part of the larynx there was an irregularly, oval, nodular tumour, about 1 cm. in diameter, covering the anterior part of both cords and projecting up above them about 1·5 cm. The macroscopical appearance of the tumour in the larynx suggested papilloma, but under the microscope it proved to be a dense fibroma. The tumour was removed in four sittings and the point of its attachment, along the anterior fourth of the right vocal cord, was cauterised with chromic acid, and the larynx is now practically normal.

There is nothing in the history of any one of the three cases of papillomata which gives us any clue as to the etiology; the possibility of smoking and drinking, as an etiological factor, suggested by Case 3, is more than counterbalanced by Cases 1 and 2, in which there was no such element; it is not wise to attempt to draw any conclusive deductions from so limited a number of cases. The liability of papillomata to recur, unless thoroughly removed, is well illustrated in Case 3. In the three cases of fibromata there are also no conditions which can be reasonably considered as causes for their development. In all of the cases the principal symptoms were hoarseness, caused by the tumours being so situated as to mechanically interfere with perfect opposition of the cords, and more or less cough, and the feeling of discomfort and irritation in the larynx. In all such cases the treatment consists in thorough removal of the tumours, by intra-laryngeal operation, if possible, if not by an external operation.—*Laryngoscope*, *August*, 1899.

## 42.—MILIARY TUBERCULOSIS OF THE PLEURA WITHOUT OTHER TUBERCULOUS INVOLVEMENT OF THE LUNG.

By Eugene Hodenpyl, M.D.,
Instructor in Pathology, College of Physicians and Surgeons, Columbia University; &c.

[The following is taken from Dr. Hodenpyl's paper. It is undoubtedly a subject of much importance and interest.]

*Relative Frequency of Primary Pleural Tuberculosis.*—I have during the past three months examined the pleural surfaces of one hundred and thirty-one adults, which have come to autopsy. Children's lungs were not included in this list. The ages of the subjects varied between fourteen and ninety-two years. In thirty-seven cases there was more or less advanced pulmonary tuberculosis. In three cases, the pleuræ on both sides were so covered with adhesions that the presence or absence of tubercles could not readily be determined. On gross inspection of the remaining ninety-one cases, in which the lungs were free from tuberculosis, in forty-five, or nearly fifty per cent., there were seen on the surface of the pulmonary pleura, and in one case on the costal pleura as well, certain nodules and patches which previous studies had led me to regard as being tuberculous in character. The gross diagnosis was confirmed by microscopic examination in all but four of these forty-five cases. In three of these cases the tiny raised nodules on the pleura proved to be miliary air cysts. In one case the nodules, six in number, were found to be miliary endotheliomata. In the forty-six remaining cases, the pleural surfaces as well as the parenchyma of the lung were free from visual evidences of tuberculosis. In several instances, however, sections were made of the pleura in these negative cases, and in three microscopic evidences of tubercle were found, *i.e.*, tuberculous foci too small to be determined by the unaided vision. The bronchial lymph nodes were found tuberculous fifteen times in the ninety-one cases, six times unassociated with tuberculosis of the lungs or pleura, and nine times in connection with tuberculosis of pleura alone.

*Relation between Miliary Tuberculosis of the Pleura and Acute Tuberculous Pleurisy.*—Much experimental evidence has accumulated of late years, showing that a large percentage of cases of acute pleurisy with effusion are really of tuberculous origin. Much or most of this evidence has been based upon the result of animal inoculations of the serous exudate; and most of these published results have not been confirmed by post-mortem examination. The percentage of cases of acute tuberculous pleurisy, in which tubercle bacilli were found in the stained exudate, or in which positive evidence of tuberculosis was obtained by animal inoculation of the serous exudate, has thus far varied within wide limits in the published results of different observers, from ten per cent. to one hundred per cent. This wide range of results is, perhaps, partially accounted for, at least, by the selection, or want of selection, of cases adopted by different investigators, and especially by the different technique employed. Daminy inoculated large quantities of the serous exudate into susceptible animals, 300 c.c. in divided doses of 10 c.c., from each case, and claims positive results in all but two of more than fifty cases. The two negative results were in cases in which the quantity of serous effusion was scanty. In three cases of acute pleurisy with effusion, which have recently come to autopsy, I found in addition to the pleural exudate a crop of miliary tubercles embedded in the subpleural connective tissue. In one case the tubercles were on the surface of the pleura and the cheesy areas communicated with the pleural sac. In these three cases the tubercle bacillus was not demonstrated in the exudate, nor was the serous fluid inoculated into animals. Were these cases examples of true tuberculous pleurisy, or were they examples of miliary tuberculosis of the pleura with concurrent or mixed infection? It is difficult to decide in these cases, in the absence of important pathological data; but the presumption would seem to be strong that the miliary tubercles present were the determining factors of the new-formed exudate. This presumption is based upon, first, experimental observation, which indicates that it is very improbable that bacteria are ever capable of passing through the pleura into the pleural sac, provided its cellular lining be intact; second, experimental evidence that tubercle bacilli inoculated into the pleural cavities of susceptible animals are capable of inducing an acute exudative inflammation, with the formation of serum, fibrin, and pus; third, escape of tubercle bacilli into the pleural cavity is greatly facilitated in those cases of miliary tuberculosis of the pleura in which the tubercles involve the surface, and is almost inevitable when cheesy areas communicate with the sac. It is not altogether improbable that pleural tubercles in susceptible individuals may occasionally serve as primary nidi for a subsequent tuberculous infection of the parenchyma of the lung.

*Conclusions.*—First: Miliary tuberculosis of the pleura, without other tuberculous manifestations of the lung, is of frequent occurrence. Second: Miliary tubercles of the pleura may, apparently, assume unusual significance either in causing in susceptible individuals, or under otherwise favourable conditions, a generalised tuberculous exudative pleurisy; or by complicating, through concurrent infection, an acute exudative pleurisy of independent origin. Third: Miliary tubercles in this situation are prone to become fibrous.—*Medical Record, June* 24, 1899.

## 43. PLEURITIC EFFUSION IN CHILDHOOD.

By Robert Maguire, M.D., F.R.C.P.,

Physician to the Hospital for Consumption at Brompton.

Given an effusion which is pleuritic and occurring in a child, the question is what are we to do with the patient? Undoubtedly, the first thing is to put a needle into the thorax and ascertain what may be the character of the effusion, whether serous or purulent. This is more important in the child than in the adult, for pleurisies are more latent in the child, and also an empyema in the child presents itself much more insidiously than in the adult. Very frequently is it entirely unsuspected, in spite of the most careful observation. Pass the needle, then, at once into any effusion in the pleura of a child. There is no danger in doing this if ordinary antiseptic precautions be adopted, and there need be no pain if we freeze the skin by the usual methods. Mistakes will happen at times, but the needle properly used can do no harm, even if it pierce a consolidation due to pneumonia. Here, however, I would give a warning. Your needle must not be too small nor your suction power too feeble. The ordinary hypodermic syringe is of not the slightest use. You must use a large-bore needle and a fairly powerful syringe for, not infrequently, pus will not pass through a small needle with feeble suction power. I prefer myself to use in such cases the usual apparatus for aspiration--it is just as easy of use as an ordinary needle—and thereby one may, if one wishes, empty the chest at once if, as may happen, the effusion is serous, or even, at times if it be purulent—a matter I will discuss hereafter. We have then ascertained whether the effusion is serous or purulent. First, we will assume that it is serous and not unduly bloodstained. If it be unduly bloodstained we must bear in mind the possibility of a mistake in the diagnosis, for though intense inflammation of the pleura may lead to an excessive exudation of red blood corpuscles, yet great bloodstaining should make one think of the presence of sarcoma of the pleura, not frequent, however, in the child.

Supposing that we have determined that the effusion is serous and not purulent, we must deal with the question of how it must be treated in a child. Positive tension in the thorax is a very important guide, though, as I have stated, it rarely occurs in children provided that the effusion is simply serous. It is detected and estimated by bulging of the intercostal spaces and by depression of the diaphragm and its underlying viscera. But displacement of the heart is no evidence of its presence. The heart can be displaced by even a small pleural effusion, and we must not be misled by this, nor deceived into thinking that because—as it is still often expressed—"the heart is pushed to the opposite side," there must be immediate operative interference. The heart is scarcely ever "pushed," it is simply drawn by the retraction of the opposite lung and of the mediastinum.

But depression of the liver, stomach, and spleen is a different matter, and further such depression is generally accompanied, even in children, by engorgement of the cervical veins and great dyspnœa. Then, undoubtedly, aspiration is the best treatment, and must be pursued, whether the fluid withdrawn be bloodstained or not. I have mentioned that in the preliminary puncture the aspirator, and not the ordinary needle, should be used. If there be no such signs of positive tension as I have described, and the fluid withdrawn is deeply bloodstained, I think it is better to stop the aspiration at once. To pursue it would only draw more blood to the inflamed lung, which probably underlies the effusion. Suppose again that the effusion be only moderate in amount, that there be no signs of positive tension, and that the fluid be not unduly bloodstained—the usual conditions under which such effusions are met with—here again, I think, that aspiration is best not proceeded with. For once purely medical measures are the best. I am no advocate for any attempts to draw off the fluid by artificial channels—as, for instance, the kidneys—say by the aid of diuretics. There is no need for any such course. Moreover, the resistance of the child's lung is so great that, even after a long collapse, it will expand normally, thus differing from the lung of the adult. But this depends greatly upon the maintenance of the general health. Fortunately in children tuberculosis is rarely the cause of pleuritic serous effusion. Yet there occur cases of serous pleuritic effusions in which there is undoubted evidence of the presence of tubercle in the lungs, and in such cases I strongly advise non-interference with the effusion. The same rule applies to adults also.

Next we must think of the treatment of such simple inflammatory but non-tuberculous effusions as we have determined to not warrant aspiration. To maintain the general health by good feeding and hygiene is the great point, but I think the disappearance of the fluid may be hastened by the administration of grey powder. This is exceedingly old-fashioned treatment, and was much cried down by Sir William Jenner. Nevertheless, I am of opinion that our forefathers were right in its use, though possibly they carried it to excess. Judiciously employed I have seen it act powerfully as a remedial agent, and with no bad effects. I see no reason to insist upon absolute rest for the young patient who has a pleuritic effusion, provided that the inflammatory process has subsided, and that there be no signs of positive tension in the thorax. Judicious open-air exercise is sometimes of great use in removing such effusions, and probably acts by increasing the general nutrition. Naturally, the same advice cannot be given to adults, for in them there is a greater risk of heart failure.—*British Medical Journal*, *August* 19, 1899.

## 44.—ON THE TREATMENT OF SUBACUTE BRONCHITIS.

By F. H. EDGEWORTH, M.B., B.Sc., &c.,
Assistant-Physician to the Bristol Royal Infirmary.

[The following is taken from Dr. Edgeworth's paper.]

At the commencement of an attack of subacute bronchitis, good results will generally be found to follow from (1) the administration of a sudorific; (2) the administration of an indirect alkali, such as citrate of potash or acetate of soda, in 20 to 30 grain doses every three or four hours, combined with a small dose of antimony if circumstances permit; (3) the application of a mustard leaf if the chest feel "raw"; and (4) a caffeine pill, of say 5 grains, at night if there be any bronchial spasm. One finds that expectoration is soon established and the patient relieved of his symptoms. He passes on into the second stage more quickly than he does if left untreated, or treated, for instance, with carbonate of ammonia.

The further question then presents itself, whether it be possible to diminish the secretion of mucus from the bronchial mucous membrane more quickly than would take place if the patient were left untreated. Patients are often first seen in this stage, especially in hospital practice. In regard to this, I should first say that as long as expectoration is difficult, or if it become so during treatment, the administration of indirect alkalies is indicated.

In this second stage there may be a large or moderate amount of phlegm coughed up. If there be a large amount of secretion, accompanied with not more cough than is sufficient to get rid of it, no drug probably does so much good as ammonium chloride, in, say, 20-grain doses every four hours. It has, unfortunately, an unpleasant taste; but this may be partially corrected by spirit of chloroform and syrup. Sometimes a large amount of secretion coming up freely is accompanied by a troublesome tickling cough, and in such a case phosphate of codeine (which is freely soluble in water) in gr. $\frac{1}{4}$ to $\frac{1}{3}$ doses, every four hours, will be found most effectual. But as a rule the amount of expectoration is moderate, and one needs drugs which will act as astringents, diminish and lessen the total secretion from the mucous membrane, whilst preserving the ratio of its constituents one to the other. Many drugs which are employed for this purpose are apt to have a greater effect on the water than on the mucus, the result of which is that the secretion, though less in amount, is more viscid and difficult of expectoration, and so a troublesome cough is set up. Senega and ammonium carbonate are valuable drugs in diminishing bronchial secretion, but occasionally they produce the before-mentioned untoward result. Tincture of Virginian prune, in ʒss. to ʒj. doses, is useful; it reduces the amount of phlegm and also allays any irritating cough. This latter action is probably dependent on the fact that it contains a small amount of hydrocyanic acid. Its astringent effect, however, is not very great. Tincture of hydrastis is a more effectual astringent, in ʒss. to ʒj. doses, and may often with advantage be combined with the former drug. Euphorbia pilulifera has a somewhat limited use. It is useful in diminishing secretion, and has also the advantage of allaying bronchial spasm. Like stramonium and lobelia, it is apt to cause nausea if given in too large a dose. I have used it in spasmodic asthma; but though its effects are often striking, they are liable to wear off in the course of a few weeks. But this is hardly a defect in the case of an attack of bronchitis. It may be given in the form of a tincture, in ♏ 10 to 30 doses.

Yerba santa—the sacred herb of California—has been used by Indians for many years in the treatment of coughs and colds. Though little known in England, experience in its use shows that it is extremely efficacious in the treatment of the second stage of bronchitis; it seems to diminish the watery and mucous constituents of the phlegm proportionately, so that this does not become more difficult of expectoration. The dose is ♏ 15 to 45 of the liquid extract. It forms a somewhat muddy mixture with water, owing to precipitation of the contained gum-resin; but the addition of a little alkali, ammonium carbonate or bicarbonate of soda, for instance, makes it clearer. Bronchial spasm in the course of the second stage of bronchitis is best treated with caffeine or iodide of potassium. The above-mentioned drugs, used for the varying conditions which may arise in the course of an attack, will be generally found to give excellent results in ordinary subacute bronchitis.—*Bristol Medico-Chirurgical Journal, September*, 1899.

## 45.—THE SERUM TREATMENT OF PNEUMONIA AND ITS RESULTS.

By Hermann M. Biggs, M.D., of New York.

[From Dr. Biggs' paper on Serum Treatment.]

Since 1884, when A. Fränkel first separated the pneumococcus in fresh culture, numerous bacteriologists have endeavoured to produce immunity against the processes caused by this organism. In animals many methods have been employed to obtain this result with varying success. The technic of experimentation with the pneumococcus has always offered unusual bacteriological difficulties.

The Klemperer brothers in 1891 reported somewhat favourable results from the treatment of six cases of pneumonia by an antipneumotoxin precipitated from the blood of immune rabbits; Janson later reported apparently favourable results in ten cases of pneumonia treated by the injection of the serum of immune rabbits, and in 1893 Lara and Botzolo recorded what they regarded as encouraging results. In 1896 DeRenzi recorded the results obtained from the treatment of ten cases of pneumonia with antitoxic serum, and while all recovered the author felt unwilling to say they might not have recovered without the use of the serum. In 1897 Weisbacker reported five cases treated by injections of serum obtained from patients convalescent from this disease, and while the objective symptoms do not seem to have been much affected by the treatment the subjective feeling of relief is said to have been marked in all and recovery in all occurred. Washburn immunised a pony and with the serum thus obtained treated two cases successfully. He describes a method for determining the antitoxic power of the serum employed. Parre reports the results of experiments made with serum obtained from an ass, a cow, and rabbits thus immunised in which he found the serum of the ass most efficacious. He reported twenty-two cases of pneumonia treated with this serum, with two deaths, these two patients being practically moribund when the serum was administered. In a later article he states that he is using the serum systematically, and that when given in 50 c.c. doses early in the disease, crisis and recovery invariably followed.

Ughetti of the University of Cantania and Cantieri, Director of the Medical Clinic at Sienna, express favourable opinions as to the efficacy of the serum prepared by Parre, while Massolongo of Verona concludes a careful and minutely detailed report as follows: "My impression as to the value of the anti-pneumococcus serum is that it is more efficacious in the treatment of pneumonia than any other agent we possess. These first experiments of mine convince me that from the DeRenzi and Parre serum we can obtain a clearly defined action on the pneumonic process, which it influences directly." Nine other clinicians have recorded similar experiences during the last year and have communicated the results to the Sero-Therapeutic Institute at Naples, where the serum is prepared.

Some experiments instituted along this line in the laboratories of the Department of Health, while still incomplete, give encouragement to hope for ultimately successful results. It is undoubtedly possible to confer upon animals (horses being employed in these experiments) a high degree of immunity to virulent cultures of the pneumococcus and the serum derived from these animals in very small amounts will protect rabbits from many times a fatal dose, when administered before the inoculation of virulent cultures of pneumococcus. The controls invariably die from the injection of $\frac{1}{1000}$ parts of the dose administered to the protected rabbits. A larger quantity of the serum is required to protect animals when the culture is administered at the same time or previous to the administration of the serum, but even then, if the administration of the serum is not delayed for too long a period, the rabbits still live. The conditions obtaining in such experiments are quite unlike those ordinarily existing in pneumonia in the human being, as pneumococcus septicæmia is ultimately produced by the inoculations, and this does not occur, as a rule, in lobar pneumonia in human beings except in severe cases and late in the disease. The animals, in these experiments, which showed a general septicæmia at the time of the administration of the serum invariably died, but lived longer than the controls. Those animals which did not show a general septicæmia at the time of the serum injection have in part lived and in part died. Successive doses also seem sometimes to save animals which would otherwise have perished. The practical results obtained in the treatment of pneumonia in the human being with this serum are indecisive. The experimental results, however, are striking, and justify a hope that better results may be later obtained with improved methods, and a serum of higher grade. It is undoubtedly important in this disease as in the other infectious diseases in which the serum treatment has been successfully employed, that the remedy should be administered at an early stage of the disease. It seems quite within the range of possibility that the next great achievement of serum therapeutics will be in the production of an efficient anti-pneumococcus serum, and if this should be obtained, all of the previous successes in this department of medicine would in practical importance be surpassed.—*Medical News, July* 29, 1899.

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## 46.—PNEUMOTHORAX FROM GAS-PRODUCING BACTERIA.

By F. G. Finley, M.D.,
Physician to the Montreal General Hospital, &c.

[Dr. Finley first relates a case in which the pneumothorax was due to a subdiaphragmatic abscess rupturing into the pleural cavity. The bacillus coli and a proteus were found in the pus by bacteriological examination.]

The diagnosis during life was that of a localised pneumothorax at the base of the lung. The cause of this was, however, very obscure. There was no evidence of tuberculosis of the lung, bacilli being constantly absent from the sputum. The possibility of a pyopneumothorax subphrenicus was considered, but against this was the absence of any downward displacement of the liver and, in addition, the heart was displaced to the right, a sign which is said to be commonly absent in collections below the diaphragm. The conditions actually found were rather peculiar. An old thick firm abscess wall was seen, bounded below by the liver and above by the diaphragm. This cavity had no communication with any of the hollow abdominal viscera, nor was any source of such an abscess discovered in the abdomen. The lung, which had been pushed up, had formed a circular ring of adhesions on its pleural surface to the chest wall, dividing the pleural cavity into an upper and lower chamber. The latter communicated by a perforation in the diaphragm with the sub-diaphragmatic abscess which had hitherto been latent. That the presence of gas was not due to any communication with any of the hollow abdominal viscera is clearly shown by the anatomical conditions, and the presence of a gas-producing bacillus, the bacillus coli, seems the only explanation of the presence of gas in the pleural sac.

So few cases have hitherto been reported of pneumothorax resulting from gas-producing organisms, that a synopsis of three previous cases may be given.

Levy (*Arch. f. Exper. Pharmakologie*, *Bd.* 35), writing in 1895, describes a case in a man aged 48, beginning with cough, pain in the left side and fever. Examination showed a left sided pleurisy. After four aspirations, three months after the onset of the illness, there was evidence of pneumothorax. Owing to dyspnœa the operation for empyema was performed, but the patient sank and died. At the autopsy there was bilateral pleurisy and pericarditis with 1·5 litres of reddish yellow fluid in the right pleura, and in the upper third of the right lung a firm focus, the size of an egg, containing whitish caseous masses. A small yellow nodule was present on the small intestine, and a number on the under surface of the diaphragm. The pleuritic exudate removed during life showed the presence of an anaerobic bacillus, identical with that previously found by Frænkel in gas phlegmons and subcutaneous emphysema and subsequently identified as Welch's bacillus capsulatus aërogenes. The bacillus produced gas both in cultures and in living tissues.

This case seems to have originated as a tubercular (?) pleurisy with effusion, subsequently infected with bacillus aërogenes.

A. G. Nichols (*British Medical Journal*, 1897), of Montreal, has recorded a case which is less open to criticism than any that have been published yet, inasmuch as gas developed in the pleural and pericardial cavities. The patient, a male, aged 21 years, was admitted to the Royal Victoria Hospital for severe abdominal pain, beginning six days previously. There was evidence of peritonitis and a diagnosis of perforative appendicitis was made, which was confirmed by operation. A left-sided pleurisy was present on admission, and four days later evidence of pneumonia, and a few days later right pneumothorax and pneumopericardium were distinctly recognised. Septic symptoms were present, but there was no sudden pain or collapse as is commonly found in perforative pneumothorax. No communication was present between the abdominal and thoracic cavities, and the case was thus clearly one of gas production in the pleura and pericardium. The autopsy fully confirmed the above conditions, and the bacilius capsulatus aërogenes was consequently discovered in sections stained by Gram-Weigert's method. Anaërobic cultures were not made, as the case occurred previous to Welch's publication.

May and Gebhart (*Arch. f. Klin. Med.*, *Bd.* 61), relate a case in a man, aged 43 years, who stabbed himself twice in the cardiac region, with a dagger which had been previously used on another for a similar purpose. The wounds were apparently trifling, and healed quickly, but the temperature remained elevated and signs of fluid developed in the left pleura, and on aspirating a quantity of cloudy and markedly hemorrhagic exudate was drawn off. A fortnight after the wound occurred evidence of pneumothorax was distinct. The gas when drawn off lit with a bluish flame. Pericardial exudation developed, and in spite of incisions into both the pleura and pericardium, the patient died. The autopsy confirmed the diagnosis, the anatomical diagnosis reading:—Subacute, left-sided, purulent pluerisy and pericarditis, following a stab in the left side. The bacillus coli and staphylococcus pyogenes were found in the exudate. Careful analysis of the gas from the pleura showed that it consisted of $CO_2$, H, & N, but no O. The presence of a gas (H) not contained in atmospheric air proves clearly the production of gas in the pleural cavity.

In all of these cases the proof that gas was evolved by bacteria is very conclusive, and it may therefore be accepted that such an event occasionally occurs. That such cases are rare is evident by the very scanty literature on the subject, but like other rare conditions, it may be more frequently found if looked for. In two cases the bacillus aërogenes capsulatus was present, and in the other bacillus coli. With our present scanty knowledge on the subject it is difficult to establish satisfactorily any diagnostic points. It will be noticed, however, that in three of the cases there was abdominal disease, and in the remaining one the origin seems to have been a wound infection. In Nichols' case the evidence of abdominal disease (appendicitis) was distinct during life. In Levy's case there was tuberculosis of the peritoneum, discovered only at the autopsy, and in my own the subdiaphragmatic abscess was doubtless infected by the bacillus coli from the intestine. The frequency with which the abdominal organs are affected by the bacillus capsulatus aërogenes, and the constant presence of the gas-producing bacillus coli in the large intestine, are in accord with the clinical features of three of the recorded cases, and where there is evidence of abdominal disease with subsequent pneumothorax, the possibility of the production of gas by bacteria is worth bearing in mind. The onset of the condition seems commonly to be gradual, and not abrupt, as is usual in pneumothorax. May lays much stress on a chemical analysis of the gases. He points out that a cavity may become infected by air-producing bacteria, and yet the pneumothorax be due to communication with the external air. The presence of a gas in the cavity, not found in atmospheric air, may therefore be regarded as a proof of its zymotic character. In May's case hydrogen was present in sufficient quantity to burn, and this simple test, if constantly present, may serve to replace the more elaborate method of chemical analysis. It may be remarked that the bubbles of gas produced by the bacillus capsulatus aërogenes are also inflammable.

In conclusion, it may be now accepted :—(1) That pneumothorax may in exceptional cases result from gas-producing bacteria, and that the bacillus coli or bacillus capsulatus aërogenes may be the organism concerned. (2) That the presence of hydrogen or other gases not found in the atmosphere is conclusive proof of this condition being induced by gas-producing bacteria (May).—*Montreal Medical Journal*, 1899, *p.* 759.

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## 47.—THE SIGNS AND SYMPTOMS OF EARLY PHTHISIS.

### By Dr. F. Graham Crookshank.

In a paper read before the Medical Society of Northampton (*Clinical Journal*, August 23, 1899, p. 281), the author discusses the diagnosis of phthisis before the physical signs in the lungs become well marked. We cannot at this stage rely upon bacteriological examinations, for there is generally no expectoration to be obtained, and in any case a negative examination is by no means conclusive. The commonest and most important symptom of early phthisis, especially in young people, is dyspepsia. It is, however, the concomitance of wasting that makes the dyspepsia of initial phthisis of such diagnostic importance ; in none other of the dyspepsias of young people does wasting occur. Diarrhœa associated with the dyspepsia is of prognostic value. Cough is not prominently an early symptom. Hæmoptysis, whether in streaks from congested bronchioles or in large quantities from pulmonary aneurysms, is frequently the first symptom noticed. The occurrence of hemorrhage, actually from the lungs, in a young person free from cardiac disease is by itself almost sufficient to establish the diagnosis of phthisis. Simple acute pleuritic effusion in young people free from rheumatism is always tubercular. An account of night-sweating needs to be received with considerable caution ; it is a symptom often due to debility, badly ventilated rooms, and nightmare, as well as to pyrexia. The temperature may rise to 100° every evening for weeks before physical signs become apparent. The onset of phthisis is in some cases marked chiefly by anæmia.

Dyspepsia, loss of fat, night-sweats, and anæmia together make up a symptom-group which justifies the diagnosis of phthisis in the absence of other obvious diseases, even if the examination of the lungs and sputum afford purely negative results. At the same time this symptom-group is curiously simulated in two other conditions—adenoids and dental caries. The presence in the vertebral groove of long, fine, silky hairs is highly suggestive of a tubercular tendency. The physical signs of early phthisis are more often overlooked from ignorance of the sites in which they should be sought than from ignorance of the nature of the signs themselves. The earliest of these signs are due, not to consolidation, but to loss of elasticity of the lung. This inelasticity will reveal itself by retraction and relative immobility of the apex, and by an alteration in the percussion note. It is at a somewhat later stage that the vesicular character of the breath-sounds is abolished by a prolongation of the expiratory sound, which becomes divided from the inspiratory sound. Other signs, significant but not diagnostic, are bronchial breathing, cogwheel respiration, increased vocal fremitus, and bronchophony. Adventitious sounds, such as fine crackling, are the first absolute signs of disease to appear. In examining the sputum, the detection of elastic fibres, after boiling with caustic soda, is conclusive evidence of the destruction of lung tissue, and as such may be obtained before bacilli are found in the sputum. Of the physical signs of early phthisis alteration in the percussion note is the first to appear, and the presence of fine moist râles is the most positive.—*Dr. Squire's abstract in Treatment*, 1899, *p*. 487.

## 48.—A SPECIAL COMBINATION OF SIGNS FOUND AT THE ONSET OF PHTHISIS.

The early diagnosis of phthisis has been one of the most difficult and most important problems presented to the practitioner. The greater hope of cure now held out by the open-air treatment renders it still more important. At the meeting of the Société Médicale des Hôpitaux which was held on July 21, Dr. Ch. Fernet called attention to a special combination of signs—"*syndrome*"—found at the onset of the disease, which appears to have great diagnostic value. It consists in the simultaneous existence of physical signs on the same side at the apex of the lung, in the interscapular space in the locality of the bronchial glands, and at the base of the lung. The appearance of the first signs at the apex of one lung is, of course, well known; on this most practitioners exclusively base the diagnosis. Change in the respiratory murmur, adventitious sounds and modification of the percussion note awaken fears, and if the general health has failed and some emaciation, pyrexia, night sweats, or even hæmoptysis, have occurred, the diagnosis is almost certain. However, there are numerous cases where the practitioner may hesitate : perhaps the physical signs are ill-marked and doubtful, so that it is thought that they may be due to emphysema, or partial fibrosis secondary to pneumonia or broncho-pneumonia. Then the complementary phenomena to be described acquire their value and often decide the question. Tracheo-bronchial adenopathy frequently accompanies pulmonary tuberculosis and appears at the beginning, and, as in the adenopathy of other infectious diseases, the glands are largest in the initial stage. The signs of the adenopathy are then most apparent ; they are distinct from those of the pulmonary lesions with which later they are commingled. The diagnosis of the adenopathy is not difficult if it is looked for ; there are dullness and resistance to the finger in the interscapular space on the side of the diseased lung at the level of the upper dorsal vertebræ ; on auscultation hollow, almost cavernous, breath sounds are heard, the expiratory sound being the louder and longer. These signs are clearly separate from those of the pulmonary lesions which are found in the external part of the supra- and infra-spinous fossæ. At the same time there is often axillary adenopathy on the diseased side—a fact which apparently has not been pointed out before. Dr. Fernet finds that it is very common. The third focus of which signs are encountered on the diseased side is situated at the base of the lung behind. Here diminution of percussion resonance and sub-crepitant râles are frequently found. These basic phenomena are not described by writers because they are not looked for. Dr. Fernet described them 20 years ago, but Grancher is the only writer who has insisted on them. Although diminution of resonance on percussion is most usually found, sometimes in places there is slight tympany. On auscultation, sometimes there is weakness of respiratory murmur, sometimes harsh inspiration, and sometimes fine crepitation resembling the crepitant râle of pneumonia ; more often the sub-crepitant râle is present. These phenomena Dr. Fernet thinks are due to a difficulty in the lymphatic circulation produced by the glandular affection—an engorgement of the lower part of the lung with results analogous to what is observed in the faces of strumous subjects with diseased cervical glands. The influence of gravity would explain the limitation of the engorgement to the base of the lung. Thus, these three sets of phenomena are connected like the links of a chain : the tuberculosis of the apex is the initial lesion ; the tracheo-bronchial adenopathy is directly associated with, and secondary to, it ; and the basic engorgement appears to be dependent on the adenopathy.—*A leaderette in The Lancet, August* 12, 1899.

# 49.—PULMONARY TUBERCULOSIS IN YOUNG CHILDREN.

By H. J. Campbell, M.D. Lond., F.R.C.P.,

Senior Physician to the Bradford Royal Infirmary, and Lecturer on Forensic Medicine in the Yorkshire College, Leeds.

[From Dr. Campbell's paper.]

With regard to the character of the process, it is generally a tuberculous, caseating, broncho-pneumonia. The patches are usually numerous, and originally separate ones may join together so as to form more or less extensive areas of consolidation. Cavitation, such as occurs in adults, is excessively rare, although in some cases the centres of the caseous patches may here and there be so softened as to present small excavations. When the lung condition is due to direct extension of the mischief from a bronchial gland, the diseased area may be localised to the neighbourhood of the root; but when this is not the case, the patches are, as a rule, widely distributed, with more or less healthy lung tissue between them. If very extensive, however, whole lobes, or even the entire lung on one side, may be rendered solid by the coalescence of neighbouring patches. These signs are, in many cases, very indefinite, and in almost all cases misleading. Generally speaking, the signs are the same as in broncho-pneumonia, with one difference, namely, that in the majority of cases they do not at all correspond in degree, with the manifestly serious condition of the patient. With regard to the ordinary adult symptoms of cough and hæmoptysis, the former naturally occurs as a result of the broncho-pneumonia, although I have observed cases with extensive lung disease in which cough has been almost absent. The latter, that is to say hæmoptysis, is comparatively rare, owing to the fact that the course is usually too rapid to permit of aneurysm formation or of erosion of vessels. The expectoration is, as in most lung affections in young children, frequently not available for examination, being scanty in quantity, and moreover being usually swallowed. It may be noted, however, that in some cases of phthisis in young children the expectoration is profuse, and is voluntarily ejected.

Of general symptoms, the one to which I attach most importance is wasting, especially if it be associated with marked anæmia and progressive debility. In the majority of the cases the wasting occurs some time before the lung signs become evident, and during this period there has probably been an increase of size in the bronchial glands. At the same time tubercle may also develop in various organs, for it is very rare to find post-mortem that the disease is entirely pulmonary. The bronchial glands are so constantly affected, that Henoch, with his enormous experience, has stated that he can only recollect a few cases where they have been healthy. A point of very great interest with regard to the presence of caseating glands is the very long period during which the disease may remain latent in these organs. The course of the disease is almost invariably either acute or subacute, the patients dying within six months, or, at most, a year from the onset of definite signs of mischief. Death occurs either from exhaustion, diarrhœa, intercurrent broncho-pneumonia attacking parts of the lung previously healthy, or from tuberculous meningitis. A few cases seem to become stationary for a time, the patients ultimately dying of acute tuberculosis, whilst a still smaller number develop the signs of fibroid phthisis, and may live with impaired nutrition for years. In a certain very small proportion of cases, complete recovery takes place ; but this is so rare, that, when it apparently occurs, I think the correctness of the diagnosis is to be doubted, unless tubercle bacilli have been actually found.

The differential diagnosis of the disease often, or perhaps I may say usually, presents much difficulty. Excluding the cases where the lung disease is only part of a general acute tuberculosis, the condition most likely to lead to error is that of non-tuberculous broncho-pneumonia. In my opinion, the only grounds upon which a positive diagnosis can be based in these cases, apart from finding tubercle bacilli, are the insidious onset, gradual wasting, and progressive anæmia and debility having occurred for some time before the lung symptoms have become prominent in the course of the illness. In some cases a positive opinion is well-nigh impossible, and, I suppose, few medical men have not at some time or other diagnosed as pulmonary phthisis a case which has ultimately turned out to be non-tuberculous broncho-pneumonia, or even apical croupous pneumonia, which has taken an unusual time to resolve. The converse mistake is far less frequently made. Another difficulty which occasionally occurs is in the distinction of phthisis, where the base chiefly or only is attacked from pleurisy with effusion. In some cases, and these are of great importance from the point of view of prognosis, the lung symptoms are masked by the existence of a tuberculous empyema.

The treatment, unfortunately, need not detain me long. In the early stages it is chiefly hygienic, dietetic, and climatic, though creasote, arsenic, hypophosphites, and cod-liver oil seem to do good in some cases, and certainly should be given ; whilst in the latter stages it is purely symptomatic.—*Edinburgh Medical Journal*, *September*, 1899.

# DISEASES OF THE ORGANS OF DIGESTION.

## 50.—THE THERAPEUTICS OF PAINFUL DEGLUTITION.

By Dr. Yonge.

The author (*The Therapist*, July 15, 1899) made a series of observations with fourteen local anæsthetics with the object of determining the most suitable substance in this class for palliation of laryngeal or pharyngeal dysphagia. Nine of them seem to possess considerable value under different circumstances. They are cocaine, antipyrin, carbolic acid, guaiacol (with or without menthol), eucaine, morphine (with or without iodoform), paramonochlorphenol, and orthoform. Nitrate of silver in solution, if used as a spray for laryngeal ulceration, produces a film which protects the denuded surface from further irritation. Cocaine he found to be one of the best, but it has the disadvantages of transitory action, toxicity, expensiveness, a bitter taste, and the production of a constrictive feeling. Ice-cold solutions of cocaine appeared to have at least double the anæsthetic power of solutions of ordinary temperatures. A combination of cocaine with antipyrin (five per cent. of the former to twenty per cent. of the latter), used as a spray gave relief in moderate degrees of pain for two or three hours. In perichondritis of the larynx a thirty per cent. solution of antipyrin was found superior to cocaine in that the effects lasted much longer and the quantity of the drug required was in most instances innocuous. Eucaine B. appeared to be preferable in children. He found a twenty-per-cent. solution of carbolic acid approximately equivalent to a one or two-per-cent. solution of cocaine.

Dysphagia resulting from a tuberculous ulcer of the larynx may be quickly relieved by puncturing its floor with a specially curved syringe and injecting one minim of pure guaiacol. He mentions an instance of this character in which dysphagia was so great that rectal alimentation became necessary, although the patient's appetite was ravenous. One week's treatment with guaiacol sprays and two injections of one minim of guaiacol in the floor of the ulcer caused the dysphagia to disappear and the ulcer soon healed. Insufflation of morphine and iodoform is an old method of treatment. A more recent application and one of great value in advanced cases of laryngitis in which any direct attempt at applying drugs causes distress, is prepared as follows: ℞ Morphiæ hydrochlorat, gr. $\frac{1}{6}$. Mucilag. acaciæ ʒ j. Glycerini ʒ ij. Aquæ q.s. ad ℥ j. This mixture is administered in sips before each meal. The sticky fluid clings to those parts which the food will touch on its way into the œsophagus and thus temporarily relieves the pain of deglutition. The method is applicable for syphilitic and malignant ulceration.

Paramonochlorphenol has been highly recommended by Simanowsky and Spengler, of St. Petersburg, for tuberculous laryngitis as both palliative and curative. It is employed in solutions of from five to twenty per cent. in glycerine. These are rubbed into infiltrations and ulcerations with an ordinary curved cotton applicator. The administration causes acute pain, which is followed, however, by a prolonged anæsthetic effect. Orthoform is a powerful anæsthetic, not so potent as cocaine, but more suitable for prolonged application by reason of its innocuousness. The anodyne gives relief in from five to ten minutes, and the effect lasts from a few hours to four or five days, owing to the slow solubility of the substance. The drug has no effect upon unbroken mucous membrane. It is necessary that the nerve-endings be exposed. It is well known that fluid thickened with flour, arrowroot, &c., is less painful to swallow than either solids or liquids. Sucking small pieces of ice before a meal gives considerable relief. In ulcerative conditions of the larynx a patient can sometimes swallow with comfort if he lies flat on his stomach and sucks up nourishment through a tube from a cup placed on a chair by the bedside; or, while in the same position, food may be swallowed in gulps to avoid the choking and coughing which is due to imperfect closure of the upper part of the larynx. The use of the œsophageal tube has been advised, but it causes such discomfort that rectal feeding seems preferable. No single remedy exists which will relieve all forms of dysphagia, but when one anæsthetic fails another may succeed, so that there need scarcely be a patient who is forced to turn away unrelieved.—*Medical News, September* 23, 1899.

## 51.—ON THE DIAGNOSIS OF DISEASES OF THE STOMACH.

By Vaughan Harley, M.D. Ed., M.R.C.P.,
Professor of Pathological Chemistry, University College, London.

[The following practical remarks are taken from Dr. Harley's paper on "Some Diseases of the Stomach and their Diagnosis by Chemical Methods."]

In the first place it is necessary to use the stomach tube to obtain the gastric contents a given time after a test meal, and before describing the test meals it is as well to say a few words regarding the stomach tube and its use. In no cases should the stomach tube be moistened with oil or with vaseline, as is sometimes done, in order to make it pass more easily, because though this may facilitate the passage of the tube, it undoubtedly adds greatly to the discomfort of the patient. The soft india-rubber stomach tube should be moistened in warm water, and the patient then told to open his mouth. The patient should sit comfortably in a chair, but should not throw the head backward, as no advantage is gained by this manœuvre. The tube is then passed to the back of the pharynx and the patient told to swallow, at the same moment gentle pressure is made on the tube which will pass down partly by its own weight. In some cases patients complain of asphyxia, so at the commencement it is necessary to tell the patient to breathe deeply, and if the tendency to the feeling of asphyxia does not pass away at once, or if any blueness is apparent about the face, the tube ought to be removed at once.

After the passage of the stomach tube, it is necessary to obtain the contents, and for this purpose three methods are employed. It is as well always to allow the tube to remain for some few minutes in the stomach before employing any of these methods, so as to allow the patient to have become accustomed to the sensation. (1) After the tube has passed, it is advised by some that the hand should be pressed over the region of the stomach. This method seems to be practically of no good whatever. (2) A better method of expression is by telling the patient to bear down or contract the abdomen, when the contents usually come up the tube. In some cases by telling the patient to breathe deeply or cough, the same results are obtained. In some cases, where the stomach contents are very thick with mucus, no contents will come up by this means, and then suction may be employed. (3) In suction it is necessary not to employ too great force, and for this purpose one can attach to the stomach tube a wash-bottle with a double bored cork and two tubes—one passing to the bottom of the bottle from the stomach tube, the other tube passing out of the cork leading outwards. This tube one can then suck with the mouth so as to give a slight expression to the stomach contents, or one can attach a Higginson's india-rubber ball so as to supply expression by this means. With the gentle expression which is thus applied one runs practically no danger, and in cases where mucus would otherwise hinder the gastric contents coming up the tube, this method will save all trouble.

For my purposes I have found Ewald's test practically the best, and in all the analyses described this is the test meal employed. It consists of two cups of weak tea and two slices of toast (dry), taken an hour before the contents of the stomach are removed. Under ordinary circumstances, after this meal one thus obtains a thin, intimately mixed "stomach contents" without any bad smell. As far as the chemical analysis of the contents of the stomach is concerned, the Ewald hour test meal appears the most useful, as giving a more constant standard on which to base conclusions ; but it must be borne in mind that Leube's test meal is the best for information concerning the motor power of the stomach. It is most necessary in these cases that one should know the motor power of the stomach so as to judge of the rate of passage of the gastric contents.

To investigate this motor power the following procedure may be adopted. A fasting patient is given one quarter of a pound of freshly-minced meat and a little bread, and then, four, five to seven hours after the test meal, one passes the tube and sees what may be left in the stomach. An ordinary individual with this diet has after five or six hours no residue in his stomach. In cases of increased irritability of the stomach, when the motor power is really increased, one may find between the third and fourth hour the stomach on this diet practically empty. In these cases one can say it is a case of increased motility. On the other hand, one finds cases after seven, eight, or even sixteen hours, where there is still a residue of the meal in the stomach, and these are cases of delayed motility, without any pyloric stenosis. With this method I have found that one obtains much more accurate results than by any of the other numerous methods employed by other observers, such as the administration of oil, &c., and with the least opposition from the patient.

The best method, in my opinion, for testing the size of the stomach is to distend the stomach with gas. For this purpose one can either blow down the stomach tube a certain volume of air until the stomach is distended and then percuss out the size of the stomach through the abdominal walls, or, what is more convenient as a rule, give the patient first half a teaspoonful of tartaric acid and immediately following it half a teaspoonful of bicarbonate of soda, each dissolved in about a wineglass of water. The stomach then distends itself and one is able to see in some cases peristaltic waves passing along ; at any rate one is able to map out the general outline of the stomach. In cases of simple dilatation the lower margin of the stomach may be half-way between the umbilicus and the pelvis. On the other hand, one sees cases where the lower margin of the stomach may be as low down as the pelvis and the upper margin just slightly above the umbilicus. These marked cases of gastroptosis are rare, but slight cases of gastroptosis in which the upper margin of the stomach can be well marked out below its normal position, and a good many cases where one obtains physical signs on percussion are not really cases of dilatation, but are cases in which there is gastroptosis.

*Gastric Ulcer.*—The typical points in an analysis of stomach contents in a case of gastric ulcer are a marked reaction to free hydrochloric acid, and in this case mucus absent, but as a rule present, though not in excess. Total acidity is very much increased, the quantitative analysis of free hydrochloric acid is high, the digestive power, if anything, being quicker than normal.

*Gastric Carcinoma.*—In discussing the question of the value of an analysis of the gastric contents in diagnosing diseases of the stomach, it is to be noted that at one time the absence of free hydrochloric acid was said to be diagnostic of malignant disease, but as a larger number of cases were examined and more exact methods followed it was found that this was not pathognomonic. Concerning the presence or absence of hydrochloric acid in carcinoma of the stomach, the numerous analyses which have been made of recent years show that, although in some cases of carcinoma of the stomach free hydrochloric acid may be entirely absent, in others it is present, and that in a few cases it is increased. It appears that in those cases of malignant disease which arise out of an old ulcer, the tendency is for free hydrochloric acid to be either present or slightly increased, while in all other cases of malignant disease free hydrochloric acid is either entirely absent or very markedly diminished. The real significance of the absence of hydrochloric acid is not so great, when we remember that there are many cases of simple neurotic dyspepsia in which hydrochloric acid is entirely absent. At the same time, in a doubtful case of malignant disease of the stomach, the fact of there being a deficiency of free hydrochloric acid is helpful in the diagnosis.—*Practitioner*, *October*, 1899.

## 52.—THE CLINICAL COURSE OF GASTRIC ULCER.

Greenough and Joslin (*American Journal of the Medical Sciences*, August, 1899) undertook a study of this disease as it presented itself at the Massachusetts General Hospital between the years 1888 and 1898. During this period there were received into the medical department of the hospital thirteen thousand and ninety-seven cases of all kinds, among which there were one hundred and eighty-seven instances of gastric ulcer, a proportion of 1·4 per cent. This figure corresponds closely with that mentioned by Welch in Pepper's "System of Medicine" for Europe, but is double that of Lebert for Zurich and Breslau. A study of the comparative frequency of gastric ulcer in Baltimore, Chicago, Denver, and Boston yielded the following figures respectively: 0·43, 0·32, 0·15, 0·12 per cent., which partially confirm the statement that the disease is more common in northern than in southern countries. Of the cases at the Massachusetts Hospital, one hundred and fifty-seven occurred in females and thirty in males, a proportion of 5·23 to 1, which is somewhat higher than that usually given. The average age of the male patients was 36·75 years, of the female 27·1 years. Three-quarters of all of the cases occurred between twenty and forty years of age. No relation could be clearly made out between trauma and the development of gastric ulcer, and occupation appeared to play an insignificant rôle in the etiology. The symptoms present exhibited the following order of frequency: Vomiting in 95·7 per cent. of cases, pain in 92·5 per cent., hæmatemesis in 78·6 per cent., pallor in 70·1 per cent., tenderness in 69·57 per cent., constipation in 65·8 per cent. The vomiting took place at no constant time. In 83 per cent. of cases the pain was referred to the epigastrium, and in 53 per cent. it was confined to this locality. Pain in the back also was present in a considerable number of cases. In a large proportion (59 per cent.) of the cases the pain followed the ingestion of food. In a small proportion (7·4 per cent.) there was no complaint of pain at all. In half of these cases the onset was attended with severe hemorrhage, and three of this number terminated fatally. Of the remainder several also were attended with marked hemorrhage. Hæmatemesis occurred in 81 per cent. of the cases, and in 45 per cent. it was severe. It ushered in the symptoms in nineteen cases, in three of which, as well as in four other cases, it led to a fatal termination. Of these fatal cases, five (17 per cent.) occurred in males and two (1·27 per cent.) in females. These patients also exceeded the average age for their respective sexes. Repeated hemorrhage seemed more prone to cause death than a single copious extravasation. Operation for hemorrhage was performed under unfavourable conditions in two cases, and with fatal results. Pallor was observed in 80 per cent. of cases. In most of the cases in which the blood was studied the number of red blood corpuscles was diminished, and in even greater degree the percentage of hæmoglobin. Tenderness was present in only 70 per cent. of the cases; and constipation was observed in 81 per cent.

Perforation occurred in six cases (3·2 per cent.), in all of which symptoms of ulcer had previously been present. As a rule the perforation set in suddenly, and in all cases it terminated fatally, although in one case the patient lived for seventy days and died of parenchymatous nephritis. In four of the cases the perforating ulcer was situated on the lesser curvature; in two of these the perforation took place anteriorly and in one posteriorly. In one case the ulcer was on the anterior wall, and in one the situation of the ulcer could not be learned. General peritonitis resulted in two cases, the ulcer being situated on the lesser curvature, in one anteriorly and in the other posteriorly. In two cases a local abscess formed, the ulcer being situated on the anterior wall in one and on the lesser curvature and perforating anteriorly in the other. In one case perigastritis prevented any untoward results, and in the sixth no autopsy was held. Only one patient suffered from perforation while on a starvation diet, and this one alone survived, dying later of nephritis, with only a fibrinous perigastritis to mark the site of the ulcer. Operation was performed in one case six hours after perforation, but as the patient had been taking large quantities of liquids the fatal result was not unexpected.

Of the whole number of cases, 64 per cent. were considered cured when discharged, 18 per cent. relieved, and 8 per cent. had died. Of ninety-nine of the cases investigated after an interval averaging five years, there had been recurrence in forty-one, death in fifteen, cure in forty-three ; and in the fifteen fatal cases, the cause of death was gastric in eight, non-gastric in three, and doubtful in four. The mortality was much higher among males than among females.

The results of treatment, as determined at the time of discharge from the hospital, turned out much the same whether the patients received no food by the mouth for the first few days, or only a small quantity of milk and lime-water was given for the same period. Under the first-named condition the patients remained longer in the hospital than under the second-named ; and a larger proportion of the latter remained well after leaving the hospital, but these were chiefly the severe cases.—*From a leading article in the Medical Record, September* 16, 1899.

## 53.—SYPHILITIC DISEASE OF THE STOMACH.

By J. W. Dalgliesh, M.D. Durh.

[From Dr. Dalgliesh's paper.]

When a patient complains of dyspepsia or of symptoms suggestive of ulceration or morbid growth of the stomach, how seldom do we think of syphilis in making our diagnosis and how very rarely do mercury and iodide of potassium enter into our prescriptions. And yet if syphilis may cause catarrh of the bronchial mucous membrane, why may it not cause gastric catarrh ? In like manner we rarely think of gummatous disease of the stomach, although it is known to be so frequent in many other organs of the body. On these grounds the following three cases are of interest from the rapidity with which gastric symptoms of the utmost gravity subsided under antisyphilitic treatment.

*Case* 1.—On April 3, 1898, a married woman, 55 years of age, complained to me of pain in the epigastrium which seized her a few minutes after taking food and which made her afraid to eat. This condition had been gradually coming on since February, and she lost much flesh, strength, and colour. Dieting combined with bismuth and Dover's powder relieved her, but upon leaving off the treatment the symptoms returned. On June 11 at 2 a.m. she had profuse hæmatemesis, a large chamber pot being instantly three-fourths filled with blood. The right rectus abdominalis was rigid, and midway between the right costal cartilages and the umbilicus was a hardish swelling of about the size of a small hen's egg. During the next four days there were slight recurrences of the hæmatemesis and much altered blood and some pus were voided per rectum. The gastric pain disappeared with the bleeding and never recurred. She was fed on iced Brand's essence of beef only, and she took opium and turpentine. To my surprise she seemed to improve slightly, and she expressed herself as feeling decidedly better, although she presented a ghastly sight. I had a vivid recollection of having treated her four years before for undoubted syphilitic ulceration of the skin over the left knee, which rapidly healed under the internal administration of an iodide and dressing with mercurial ointment. The question presented itself: Was she now suffering from ulcerating gummatous disease of the pylorus? Acting on this hypothesis I immediately prescribed large doses of iodide of potassium, which she took well, and very soon she had more inclination for food. She rapidly improved, making flesh, strength, and blood in a truly miraculous manner, and after about ten days of this treatment she was able to walk from one room to another. She has never had any gastric symptoms since, and the swelling has entirely disappeared. There was a discharge of about half an ounce of pus and occasionally a little blood on the stools for about two weeks, after which it gradually disappeared and has not returned About ten days later she had a sharp attack of periostitis of the lower end of the right tibia. The iodide was still further increased, and with rest the periostitis passed off, leaving the bone tender, thickened and aching on exertion. On September 4, at 2 a.m., her husband found her in a severe and prolonged right-sided convulsion. On recovering consciousness she had motor aphasia. I now added mercury to the iodide. The motor aphasia rapidly passed off, but there was marked amnesic aphasia for over two weeks, and then it gradually passed off. The pulse was still infrequent, regular, small, short, and of low tension. The aortic and mitral meso-systolic murmurs which had been present since the hemorrhage were still to be heard, though growing fainter, and the apex beat could be felt a little to the left of the nipple line. On December 27 the patient was found to be perfectly well, and she expressed herself as feeling better than she had done for ten years.

*Case* 2.—A married woman, 32 years of age, consulted me in November 1897, complaining of pain in the epigastrium and left hypochondrium soon after taking food, so that she often abstained from eating. She also suffered from constant pain referred to the right hypochondriac region, shooting up to the right shoulder and through to the back. In addition to these symptoms she complained bitterly of great weakness and depression, sleeplessness, and acidity. She was anæmic and constipated, but there was no jaundice. She had suffered thus for fourteen months, and although she had for one year been under the treatment of a skilful and experienced man she was becoming worse rather than better, and he had told her that he could do nothing more for her. She had been extremely stout, but was now so emaciated, and her abdominal walls were so relaxed that it was easy to thoroughly examine every nook and corner of the abdomen. However, there was nothing to be detected except a small, tender spot in the epigastrium. a very small liver, and some right intercostal neuralgia. For six months I tried dieting, bismuth and opium, aperients and tonics with but temporary relief to the pain and other complaints. I then prescribed large doses of mercury and iodide of potassium, with the result that she immediately and rapidly improved, and in one month's time she said she was perfectly well, and she looked so. She has remained quite well ever since. The personal history of this patient was that she had been twice married and had had two children by each husband, all of them being alive and healthy. She had had no abortions. Her first husband had suffered from epileptic fits, and had died at the age of 39 years from pain in the stomach and vomiting of blood and pus.

*Case* 3.—In August, 1898, a married woman, 54 years of age, consulted me, complaining of food accumulating in the stomach for about four days, causing great distension, discomfort, and thirst, a condition which was followed and relieved by profuse vomiting. Her abdomen was very flaccid and her stomach was enormously dilated. She was feeble, anæmic, emaciated, and melancholic. The interest of the case for my present purpose centres in the fact that she had suffered in this way since five years before, when she had a growth obstructing the pylorus which four medical practitioners had pronounced to be malignant; but a fifth said it was not malignant, and he prescribed some medicine which dispersed it in a month. Her husband had died at 50 years of age from some disease of the nervous system.

Of course one cannot generalise from three cases, but as all the patients were married women, I have wondered whether married women may not suffer more than men from rare forms of tertiary syphilis, seeing that they so often acquire the disease in a peculiar way and in a mitigated form, the virulence being so reduced that they may never suffer from (or at least show) any of the primary or secondary manifestations, and may thus escape treatment. If confronted with a lesion of the nervous system, we are almost too prone to immediately set about searching for evidences of past syphilis. If there be an intractable ulcer of the skin one at once hears the whisper: Is it syphilitic? If we find a localised lung disease, we think of syphilis as the possible etiological factor. Then why do we so rarely think of syphilis when a patient is suffering from chronic gastric disease which defies ordinary treatment? We know that syphilis is prone to attack the mouth and throat, the rectum and anus—*i.e.*, the entrance and the exit of the alimentary canal—and it seems reasonable that it should sometimes attack the cardiac and the pyloric ends of the stomach, for they are narrowed portions of this much-used and terribly-abused organ often greatly irritated, and favourite sites for disease. Still we rarely suspect that an attack of gastritis or a gastric ulcer or morbid growth is syphilitic. I read in a recent work: "It is a remarkable fact that whilst the mucous membranes and submucous tissues of the mouth, pharynx, tongue, and rectum are very commonly involved, the intervening stomach and intestinal canal are hardly ever affected by tertiary syphilis." Perhaps the truth is that they are affected more frequently than we suspect, and that our diagnosis is at fault. At any rate, it behoves us to remember the possibility of syphilis when we are treating obstinate gastric disease. Perhaps, also, I should remind my readers that the finding of evidences of past syphilis does not prove that the lesion before us is also syphilitic. —*Lancet*, *August* 12, 1899.

## 54.—THE EARLY DIAGNOSIS OF CANCER OF THE STOMACH.

By John C. Hemmeter, M.D., Ph.D., &c.,

Professor in the Medical Department of the University of Maryland, and Director of the Clinical Laboratory, Baltimore.

[The following is taken from Dr. Hemmeter's paper. The author thus describes some of the more unusual methods of examination in cases of suspected gastric carcinoma.]

*Gastroscopic Examination.*—Whether the gastroscope will enable us to make an early diagnosis of gastric carcinoma is a very remote problem. Gastroscopy has no doubt made distinct advances during the last ten years, but it is connected with so many difficulties and dangers that the general application of this method cannot be hoped for at present. Mikulicz, Kelling, Rosenheim, Revidzoff, and Kuttner have published their studies on gastroscopic examination of the stomach. After a critical study of their reports one cannot fail to be conscious of discouragement at the absence of practical results. There is still very little promise of this method.

*Electrodiaphany* or *transillumination* of the stomach, according to the method first suggested by Einhorn, may give a suggestion of the existence of a tumour of the anterior gastric wall. But a chance of such a demonstration will be very small. Out of thirteen hundred cases of cancer of the stomach collected by W. H. Welch only thirty occurred on the anterior wall, viz., 2·3 per cent. In order to cut off the rays of the intragastric lamp a tumour must have a thickness of 1·5-2 cm. These observations have been confirmed by the writer. With a tumour of such dimensions as a requisite, and the extreme rarity of the location of tumours on the anterior gastric wall, I am disposed to consider this method unavailable for the early diagnosis.

*The Use of the X-Ray for Diagnosis.*—The author was among the first to publish studies of the position and size of the stomach for diagnostic purposes. Boas and Levy-Dorn have proposed a method of recognising strictures of the gastro-intestinal canal by skiagraphy. Capsules coated with an insoluble material and filled with bismuth subnitrate cut off the *x*-rays, and their location can be recognised in the intestines, but I doubt very much whether this method will exactly locate a carcinomatous constriction, because the intestine is not a simple tube, but a labyrinth of convolutions, superimposed upon each other, so that even if the bismuth capsule could be recognised it is absolutely impossible to state whether it is in the stomach or in the intestines, and in what convolution of the intestine it is located.

*Exploratory Laparotomy.*—This diagnostic incision I would warmly recommend in all cases of gastric disease associated with (1) rapid emaciation; (2) absence of free H Cl ; (3) reduction of proteid digestion under thirty per cent. ; and (4) presence of lactic acid by Uffelmann's test, or (5) of numerous long baseball-bat shaped Oppler-Boas bacilli. If all of the above signs and symptoms are present in any case, even of short standing and recent beginning of the disease, and no improvement follows three weeks of appropriate treatment, I should feel justified in making the diagnosis of carcinoma of the stomach even in the absence of tumour, and urge an exploratory laparotomy. There are in my opinion only two methods of making a possible early diagnosis of gastric carcinoma. One is curetting of the stomach with a soft stomach tube, and examination of the cellular detritus and fragments of neoplasm, and seeking for evidence of mitosis, which should always suggest the possibility of a neoplasm ; and the second method is exploratory laparotomy following the indications just announced. [The author thus describes the curetting named above:—For this kind of curetting a soft stomach tube suffices, provided it has a lower and a lateral aperture, the edges of which scrape away the tiny elevations of gastric mucosa, when the tube is moved in and out of the mouth. The procedure should be carried out in the morning before breakfast, when the stomach is empty. This method of obtaining specimens from the gastric mucosa during life is free from danger, and not once in my experience has any pain, distress, or hemorrhage been produced thereby. In many cases of chronic gastritis, achylia gastrica, and carcinoma, tissue fragments are found in the lavage water without especially making an effort to loosen them, by moving the tube along the gastric walls.] I differ from Haberkant and the other observers mentioned on the impossibility of an early diagnosis of gastric cancer. This is an altogether pessimistic view, and need not discourage the clinician.

The progress which the physiology, chemistry, pathology, and bacteriology of digestion have made in the last fifteen years, and are still making, strengthens the belief that we will be able to make an early diagnosis of gastric cancer in the near future.—*Medical Record, October* 11, 1899.

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## 55.—GASTRIC ADHESIONS AS A CAUSE OF DYSPEPSIA.

By William Calwell, M.A., M.D.,
Physician to the Belfast Royal Hospital, &c.

[From Dr. Calwell's paper.]

The two chief means by which the stomach discharges its functions are its secretory and motor activity. Ulcer of the stomach is by far the commonest cause of adhesion ; it is not necessary for the ulcer to perforate or even to reach the peritoneum before it may excite circumscribed peritonitis, with subsequent adhesion. About 5 per cent. of all post-mortem examinations show gastric ulcer or gastric cicatrix, and about 40 per cent. of all cases of gastric ulcer present adhesions ; or, roughly, 2 per cent. of all people have gastric adhesions. If we limit our statistics to the female sex between 20 and 35 years of age, this proportion is probably below the truth. There can be no doubt as to the serious effect of extensive gastric adhesions, although many recognised authorities simply mention it, while some do not even do so. A few lay considerable stress on it. Cohnheim says that everything which interferes with the regularity and vigour of the peristaltic movements of the stomach must prove a serious impediment to the energetic secretion of gastric juice, to the complete mixing of the food, and to its discharge into the bowel ; and such an impediment would be caused by firm adhesions. Barling, in his Ingleby Lectures, in 1895, relates a case of Terrier's, reported in July, 1894, of a woman, aged 62 years, whose symptoms of gastric ulcer were relieved by breaking down adhesions and removal of a portion of the thickening. Mayo Robson reports a case of dilatation of the stomach due to adhesions about the pylorus causing stenosis, in which he severed the adhesions and the dilatation cured itself. Adhesions about the pylorus to the under surface of the liver, to the gall bladder, to the pancreas or to lymphatic glands, are not at all uncommon and are a recognised cause of dilatation. Ludwig Pick relates a case of prolonged vomiting and suffering, followed by perforation, apparently due to adhesions. One of the most instructive cases is that of Bircher. The patient suffered from stomach symptoms; the examination of the organ revealed different results at different times as regards (1) its contents, (2) the position of the lower border, which was sometimes above and sometimes below the umbilicus. A fibrous band was found attached to the lesser curvature, about 4 cm. from the pylorus, and ran obliquely downward to the right to the anterior abdominal wall. When the stomach was filled with gas, and pulled from below, stenosis due to kinking followed; small quantities of food had no effect; large quantities caused complete stenosis.

Leube has long recognised the effect of adhesions and has summarised the practical result by two rules, one being not to operate, or very exceptionally, and only after full trial of medicinal and dietetic therapeutics in cases where adhesions after the appearance of diseases is the probable cause of the trouble. Hartmann and Soupault recite cases where adhesions were the only apparent cause of the pyloric syndrome and dilate upon the existence of adhesions, more or less extensive, fixing the stomach in a vicious position and preventing contraction sufficient to expel its contents; they remark also that after the operation of gastro-enterostomy the movements are deficient and there is "*une hypopepsie intense.*" Adhesions at the fundus apparently have not the same effect, as evidenced by the very extensive nature of those of Alexis St. Martin, and yet his general good health.

There is, in short, a type of dyspepsia which I venture to call the "adhesion type," which for some months often follows attacks we deem to be ulcer of the stomach; it also occurs independently of any clear history of ulcer. The symptoms pointing to "adhesion dyspepsia" are:—(1) A history of gastric ulcer, or of some inflammatory condition in the neighbourhood of the pylorus, particularly of localised pain and tenderness; (2) freedom from dyspeptic trouble while in bed, or while at rest with easily-digested foods; (3) the pain being of a dragging nature, and relieved by rest, but increased by exertion; (4) frequently a history of a sharp, shooting pain on sudden exertion or stretching, such as lifting up a picture; and the intuitive avoidance of certain movements, and of heavy meals; (5) some comfort from a fairly tight abdominal bandage; (6) the general health is good and appetite fair, but the patient is afraid to eat; (7) the pain generally does not come on till half-an-hour after food, and is thus distinct from the immediate pain of gastric ulcer and the delayed pain of more atonic dyspepsia; (8) I have not been able to satisfy myself as to any change in the gastric juice.

The treatment for the very severe form of this affection is palpably surgical; an exploratory operation should be made in all very chronic and threatening forms of gastric trouble. On the other hand, there is a very mild form, which clears up in a few months, and the patient regains perfect health; probably corresponding to those cases in which slight adhesions are elongated while still plastic by the movements of the stomach. Finally, there is the intermediate form, for which I recommend the following principles of treatment: (1) The diet, general hygiene, and medicines should be so regulated as to avoid any catarrh, or fermentation of the gastric contents; (2) the food should be of easy digestibility, and small in bulk, so that the peristaltic action should be as little excited as possible; (3) some mechanical support in the shape of a bandage should be used; (4) In case, however, little or no improvement follows, and the patient is suffering from disability, unable to attend to business, and is sinking into hypochondriasis, an exploratory operation should be attempted; and one is the more encouraged to advocate this course when one reflects that: (*a*) Adhesion is no perfect safeguard against perforation; (*b*) adhesions have evidently kept ulcers from healing; (*c*) the implication of rather large nervous twigs have kept up a very severe gastric disturbance or dyspepsia; (*d*) acute hemorrhagic pancreatitis is frequently associated with an adherent stomach, and is due to bacterial infection therefrom. I would, lastly, suggest that the constant annoyance and pain of such interference with free peristaltic action of the stomach, and of gratification of a healthy appetite, is probably the cause of a neurotic condition, perhaps of some of the visceral neuroses.—*British Medical Journal, October* 28, 1899.

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## 56.—ENTEROPTOSIS AND ITS RELATION TO FUNCTIONAL DISTURBANCES.

By W. F. Hamilton, M.D.,

Lecturer in Clinical Medicine, McGill University, &c.

[The following is extracted from Dr. Hamilton's paper. The cases have also been omitted.]

The view of Mathieu is thus expressed, that enteroptosis is of two varieties: (1) the form which shows itself plainly from without by a pendulous abdomen and is rarely found associated with nervous manifestations. The other form (2) is that in which the abdomen is thin and flat and where the neurotic element is very prominent,—the internal variety. The organs displayed in this disease may be all those found below the diaphragm. Most frequently, however, the colon and small intestines, the stomach, the right kidney and the liver are found in altered relations. It is not rare to find the left kidney also displaced; the spleen very rarely is found away from its normal position, while the pancreas has been once recorded as dragged down (Rokitansky, Treves). There is doubtless no one cause or group of causes which will suffice to explain the occurrence of this disease or condition. We may conclude then that :—(1) the intra-abdominal pressure is altered; (2) many causes contribute to this end; (3) the organs may be displaced by being pulled down; (4) in all probability a congenital predisposition exists in the conformity of thorax and the character of fibre entering into the supporting tissues of the organs.

The diagnosis of enteroptosis, since the adoption of the method recommended by Ewald and others, is a matter of comparative simplicity. On the inspection, the contour of the abdomen may suggest a condition of splanchnoptosis. The epigastrium is hollowed, the two lower quadrants of the abdomen, even with the patient in a recumbent position, are often quite prominent —while, as pointed out by Dr. J. C. Webster in a personal observation, the recti abdominis may be seen widely separated in thin subjects when attempting to assume an erect position. In a few cases I have seen the position of a displaced stomach indicated by the peristaltic waves extending from left to right. It is necessary, however, to distinguish between a displaced and dilated stomach. In brief, we may say that it is all important to determine: (1) the position of the lesser curvature of the stomach; (2) the relation of the greater curvature to the lesser.

In all cases where one can demonstrate the lesser curvature some degree of displacement exists, and in proportion as the lesser curvature approaches the umbilicus or falls below it, so is the degree of displacement. Dilatation, as the result of atony, is a usual accompaniment of gastroptosis and a transverse measurement of from four to five and a half inches might still be within normal limits, and would not indicate dilatation.

The hypogastrium may present a dull note from the close prolapse of the small intestine. A point upon which Glénard laid great stress is termed by him "la corde colique transverse," —by this he described a small band which ran horizontally across the abdomen about two inches or so above the umbilicus. He regarded this transverse band as the "colon transversum." Upon this point there is much diversity of opinion. Palpation of the abdomen usually reveals movable kidney, methods of examination for which are known to all. The liver, when displaced, is usually more prominent in the epigastrium and may be rotated upon its longest axis, the upper line of dulness falling much below normal. Another point upon which Glénard laid special stress, as one of diagnostic worth, and which is to be applied in all cases of enteroptosis he described under the phrase "*l'epreuve de sangle.*" This test is applied by the examiner, standing behind the patient, who also is in the erect position, and with both hands laid flatly over the lower zone of the abdomen, a firm but gentle pressure is made upwards. In the great majority of cases this affords considerable relief to the distressing dragging pain which is felt in the epigastrium and abdomen and which is one of the patient's chief complaints. At the same time the result of this test is an index to treatment.

When we consider the altered relation of the abdominal viscera in a condition of ptosis, the interference with the motor function of the intestine, the great tendency to constipation, the resulting distress and pain, it is not difficult to understand how a state of mental depression or nervousness and of general nerve weakness may result. In whatever relation these two conditions may really be, it is not hard to understand that enteroptosis may be a direct cause of the neurasthenia. Chlorosis and enteroptosis are doubtless related in both respects. Chlorosis on the one hand has been regarded as due to a neurosis, on the other as an intoxication, and it would seem that in the teaching of Meinert some ground for both these theories existed. The left-sided pain is common in chloro-anæmia, and Taylor refers this pain to distension of the colon in an organ displaced downwards. In one of our cases of marked enteroptosis the pain was constantly referred to the left side of the abdomen in the upper quadrant. Jaundice in such cases may be due to: (1) Passive congestion of a displaced liver and its results upon the bile passages; (2) to obstruction in the duodenum; (3) to direct pressure upon the bile ducts exerted by a floating kidney; (4) other causes. Constipation has already been explained. Gastric dilatation was at one time thought to be due to obstruction to the duodenum and pylorus, caused by the floating kidney so commonly found associated with it; it is doubtful if such can be the cause. The position of the stomach and the lack of tone so common in such cases doubtless extends to the muscular wall of the stomach, and in these conditions one finds sufficient explanation for the dilated condition which is rarely pronounced.

The indications for the treatment of enteroptosis as originally recommended by Glénard, are as follows: (1) The intestines must be elevated and kept in their new position; (2) the abdominal pressure must be increased; (3) the bowels must be regulated; (4) the secretions of the intestinal glands must be increased ; (5) the digestion and nutrition must be regulated and stimulated ; (6) the whole organism must be strengthened. These indications, in many instances, are met by the body binder so applied as to exert upward pressure and thus support the prolapsed organs, while it increases the intra-abdominal pressure. It may be made by ordinary grey cotton pinned firmly about the body. Then mild purgatives are needed. Massage of the abdomen often does good in stimulating the movements of the bowel and giving tone to the abdominal muscles. The same may be said of electrical (Faradic) applications. Then the use of alkalies and the choice of such a diet as is most nourishing and easily digested are of importance. Recently both hot and cold baths have come into favour as giving general tone to the circulation, and Buxbaum recommended the cold Sitz bath as inducing favourable results, especially by reason of its action upon the intestinal circulation and secretion. He advises that they be taken daily for two—five minutes. The chief advance in the treatment of the condition since 1886 has been in surgery, by which some brilliant results have been brought about. Recently reported cases have come from Treves, in England, who sutured the liver to the abdominal wall ; Bernhardt, Ferrari, Terrier and Hartmann, in Europe, and Byron B. Davis, Stengel and Beyea, in America. Gastropexy and gastrorrhaphy have, in different cases, given good results ; while in Stengel's case, operated on by Dr. Beyea, the gastro-hepatic omentum and gastro phrenic ligament were shortened by a tuck made with mutiple sutures, thus bringing the stomach up towards its normal place.—*Montreal Medical Journal*, *September*, 1899.

## 57.—PERMANGANATE OF POTASSIUM INJECTIONS IN DIARRHŒA AND DYSENTERY, TOGETHER WITH INTERNAL ANTISEPTICS.

By LUCIEN LOFTON, M.D., Emporia, Va.

[From Dr. Lofton's paper :]

Chronic inflammation of the intestinal mucosa needs to be liberally considered. Its etiology may be so-called idiopathic ; it may result from frequent relapses of acute catarrhal inflammation. It may be due to any of the following causes : Portal obstruction, various intestinal toxins, malaria, syphilis, the gouty diathesis, bad hygienic surroundings, neurasthenia, and lastly, the most important of all, the "amœbæ dysenteriæ"; and I must say the latter has resisted, as has been the experience of the best men in the profession, mostly all methods of treatment. After having tried nearly all the recognised astringents and styptics, both internally and in high water enemata, I failed to accomplish any marked success in dysentery, irrespective of origin. I then began the use of the "Woodbridge treatment," internally, in these cases of chronic intestinal catarrh, as indicated by Dr. Woodbridge, as though I had a pure infection of Eberth's bacilli. After I had secured from three to one-half dozen evacuations, resulting from the ingestion of this preparation, which covered a period of between twelve and thirty-six hours, at the same time I would invariably begin the high water enemata of potassium permanganate of the strength varying from one to six per cent., suspended in as hot water as could be borne by the patient. The amount given, of course, dependent upon the irritability of the lower gut and the condition of the patient. I would let the solution remain from five to twenty minutes, and it was administered in the following manner: Putting the patient in the dorsal decubitus position, sometimes in the "Sims" position, elevating the pelvis and lowering the head, I proceed with a fountain syringe, attached to either a rectal tube or a rubber tip, well oiled, to give the injection, allowing the water to gravitate slowly at first and very gently. As soon as the anal sphincter is sufficiently under control, I direct my assistant to lower or elevate the rubber as necessity warrants. If it is possible for the patient, after a minute's rest, to assume a knee-chest position, I advise this; then turning from side to side, now resuming the original position, massage the abdomical viscera as possible over a dry-heated flannel or woollen garment. After this is accomplished, I advise removal of the injection. Then, in the course of fifteen or twenty minutes, I repeat the same process, with the exception of lessening the per cent. of the solution, which I instruct the patient to retain as long as is convenient. I have found that absolute physical rest, in all cases, is not advisable. Some seem to prosper under one condition, some under another. This is a matter that has to be decided by both patient and doctor. If the case is a very severe one, I make this injection twice daily; if not, once a day, as a rule, will suffice. My idea for making two injections within a space of fifteen or twenty minutes, is because I wish to irrigate the intestine thoroughly first. This same method is advisable in the acute form, and will be as successful if properly administered. I would enjoin you not to suspend the potash in cold water; if you do, you will create tenesmus of an unbearable character, which will necessitate your using some kind of narcotic. It is better to give a light diet, but not necessarily a liquid diet. For the intense thirst which invariably accompanies this condition, nothing seems to act so effectually as does a tablespoonful of very hot water, or the same amount of hot lemonade, minus the sugar or cracked ice, given at short intervals. Any of the food preparations may be used to advantage in chronic dysentery. A dark, quiet room is oftentimes indicated in patients of a nervous temperament, and for very small children. I do not think it always very wise policy to continuously try to get the patient to take food. Naturally, the relatives around will insist upon this, because (they argue) if the patient is having several stools per day, he is obliged to sustain himself by taking something. This is true to an extent, but this feature should be closely watched. The method that I have briefly outlined is simple, effective, absolutely safe. When I say safe, I mean that the potassium will not cause any distressing symptoms, and is nonpoisonous both to young and old.—*The Indian Lancet, September* 16, 1899.

## 58.—IRRIGATION OF THE BOWEL IN SUMMER DIARRHŒA.

So valuable do we believe this method of treatment to be, particularly in the case of children suffering from the condition called cholera infantum, that we may be permitted to reiterate our views concerning it in this issue of the *Gazette*, although we are well aware that we have called attention to it editorially in previous years.

In obstinate cases, two individual things should be done for the relief of the child, namely, the use of irrigation of the large bowel by plain water, normal saline solution, or water containing a small amount of boracic acid; and second, and even more important, the use of milk should be stopped for a period of twenty-four or thirty-six hours, and it should be supplanted by the use of beef juice and water to allay thirst, to provide albuminoids, and yet at the same time to arrest fermentation processes which are going on in the alimentary canal, and which are represented by the curds of milk which are found undigested in the stools which are passed. Our attention is once more called to this matter by an article by Dr. Hubbard, of Boston, in the April number of the *Archives of Pediatrics.* The temperature of the solution which he employed varied from 89° to 90°. The child was placed in the lithotomy position; the catheter, free from air and full of the irrigating fluid, was gently inserted into the bowel as high as possible, and the syringe held about two feet above the baby. Ordinarily about one quart of liquid may be used, and if there seems to be any tendency to its retention, an escape tube can be inserted alongside of the entrance tube. By this means the bowel is cleansed, the temperature is lowered, the blood is sent from the congested colon to the peripheral portions of the body, and great benefit results to the child, for often a peristaltic wave is set up which cleanses the bowel even above that portion of it which is reached by the injection. Dr. Hubbard points out that seven out of ten babies which received this method of treatment had no rise of temperature the next morning, and of fifty-two other cases not so irrigated, fifty-nine per cent. had a temperature. So far as we know there are no contraindications to the employment of this method of treatment, provided a fountain syringe is held sufficiently low to produce a gentle flow of liquid into the bowel, and not high enough to produce too much hydrostatic pressure, which, if it is slightly excessive, may cause griping, and if it is very excessive may cause damage.—*A leading article from the Therapeutic Gazette, July* 15, 1899.

## 59.—ANKYLOSTOMUM DUODENALE AND ANKYLOSTOMIASIS.

By W. Maclachlan McDonald, L.R.C.P., M.R.C.S.,

Acting Surgeon and Resident Medical Officer, Holberton Institute, Antigua, West Indies.

[An excerpt from Mr. McDonald's paper.]

*Distribution.*—Ankylostomiasis may be said to occur in all tropical and subtropical countries. In Europe it is known as "Miners' anæmia," or "Tunnel disease," from the severe epidemic that occurred among the workmen at the St. Gothard tunnel in 1880. It has never been proved to occur in England, but perhaps it has not been looked for with sufficient care. Even in some tropical countries it is not recognised till carefully looked for. Here in Antigua this disease was not recognised at all till four months ago, when a few cases were investigated by the writer, and proved to be ankylostomiasis. Since then fifty-three cases have come into the hospital, showing how prevalent this disease may be without being recognised. These cases were formerly looked upon as examples of "pernicious anæmia."

*The parasite*—The ankylostomum inhabits the small intestine of a man, particularly the duodenum and jejunum, and sometimes the upper part of the ileum. The male and female do not differ much in size; they are about one-third of an inch in length and one-twentieth in breadth. They attach themselves by means of their powerful buccal suckers to the mucous membrane of the duodenum and jejunum, from the blood of which they obtain a plentiful supply of nourishment. When alive their colour is white, but reddish brown when full of blood. When dead they are grey. The eggs are regularly oval, and have a thin transparent covering, through which the yolk can be seen to be segmented.

*Symptoms.*—Those of a progressive anæmia. All the patients give a history of having been unable to do any work for many months. There is puffiness of eyelids, face, and extremities ; no pitting on pressure ; the skin is dry and harsh, and of a greenish-yellow colour. Conjunctivæ pale, or rusty, or black. Tongue and gums anæmic, with black specks from old hemorrhages ; finger nails anæmic. All the patients complain of general debility, severe palpitation, and a "beating in the head," as they call it ; breathlessness ; syncope ; dimness of vision ; burning in pit of stomach. Retinal hemorrhages are found. Heart : there is usually a well-marked systolic murmur, a thrill, and often some dilatation. Women always suffer from amenorrhœa. Diagnosis is easily made by means of the microscope. In all suspicious cases the fæces should be examined under the microscope, where the ova are easily recognised. Ankylostomiasis is easily diagnosed from beri-beri by absence of paralysis ; from malaria by absence of enlargement of the spleen, ague, and the plasmodium in the blood ; from Bright's disease by absence of albumen in the urine.

*Pathological anatomy.*—The bodies of the victims look plump and puffy, and are not wasted ; there is plenty of subcutaneous fat. There may be a small amount of general œdema. All the organs are terribly anæmic. The heart is dilated, flabby, and in a state of fatty degeneration, as are many other organs. The parasites are found attached by their suckers to the mucous membrane of the duodenum, jejunum, and upper part of the ileum. Many minute extravasations of blood are seen in the mucous membrane, showing where the parasites had been attached.

*Treatment.*—On the ova of the ankylostoma being found under the microscope the patient should have a full dose of calomel at night, and in the early morning before any food is taken, three twenty-grain doses of thymol should be given at an hour's interval between each dose. The thymol is best given in pills or in cachets. In four or five hours another dose of calomel should be given to get rid of any excess of thymol. It is not safe to give castor oil after thymol, as the thymol is soluble in the castor oil, and symptoms of poisoning may be set up. I have had one case that showed slight symptoms of thymol poisoning on taking castor oil after thymol. While the patient is taking thymol all alcoholic drinks should be stopped, for thymol is freely soluble in alcohol, and fatal cases of poisoning have occurred by the neglect of this precaution ; otherwise thymol is a perfectly safe drug. This treatment should be repeated twice a week for two or three weeks, when most likely no more ova will be found. In the meantime the patient should have a generous diet, with wine and tonics of iron and arsenic. Most patients within a week will state that they feel better and stronger, and in three or four weeks they leave the hospital and return to work in a fairly vigorous state of health. All the cases do not do so well. Some do not improve; they hang on in the same feeble condition; others go downhill steadily. These are the serious cases that have been brought into the hospital in a collapsed condition. The bad cases never do well; their internal organs are too far degenerated from the prolonged and severe anæmia. Some cases are very disappointing, even after several doses of thymol; they still pass the ova. One of the very bad cases, although the patient had been in the hospital for about six weeks, and had taken thymol on several occasions, gradually sank and died. On a post-mortem being made numerous ankylostoma were found attached by their suckers to the mucous membrane of the duodenum and jejunum, proving that thymol does not always get rid of the ankylostoma.

*Prophylaxis.*—Firstly, proper and sufficient latrine accommodation should be put up in every estate and village, and measures taken to compel those who are unwilling to use them to do so. Secondly, rain water for drinking purposes should be supplied by means of pipes to every range of labourers' houses on each estate and village. This would be of considerably benefit in checking the ravages not only of intestinal parasites, but also of dysentery, typhoid, malaria and filaria. If these two measures were carried out, the improvement effected in the health and efficiency of the people would very soon repay any expense entailed.—*St. Bartholomew's Hospital Journal, September*, 1899.

## 60.—INTESTINAL TREATMENT OF TUBERCULOUS PERITONITIS.

By Henry T. Byford, M.D.,

Professor of Gynæcology, College of Physicians and Surgeons of Chicago; &c.

I have been struck with the similarity, in some recent reports, of the results of medical and surgical treatment. E. Schroeder reports on 24 cases treated in the medical clinic at Bonn with the following results: Deaths, 33 per cent.; unimproved, 20 per cent.; discharged about cured, 41 per cent. Parker Sims, in reviewing the subject, says that some writers claim cures in 80 per cent., others in 24 per cent., by abdominal incision. His own conclusion is that improvement occurs in about 80 per cent., and a permanent cure in about 30 per cent. Here we have 20 per cent. unimproved in the medical treatment against 80 per cent. improved in the surgical, and 41 per cent. discharged about cured by medical treatment against a permanent cure in about 30 per cent. by incision. The treatment by abdominal incision, which is undoubtedly followed by immediate benefit, must still bear the burden of proving that the ultimate results are the better. Some cases have undoubtedly been demonstrated to be cured by a subsequent abdominal section, but, on the other hand, subsequent abdominal sections in cases that had shown improvement have demonstrated uninterrupted progress in the disease. The most suspicious fact of all, in these cases that show improvement, is that no one can find out how or why the improvement takes place.

I have come to the conclusion that there is something connected with the abdominal incision that is not connected with tapping or other forms of treatment, and that it is the same thing that causes improvement in almost all cases treated by abdominal section, even when pathologic conditions in the peritoneal cavity are not removed or are not even found. Thus cases of neurasthenia, hysteria, epilepsy, pelvic pain, &c., are usually temporarily benefited by an abdominal section, although they may lose the benefit later. This something, according to my observation, is the preparatory, and after-treatment of that belongs to abdominal section. There is no doubt that the medical treatment ordinarily used for subacute and chronic tubercular peritonitis is in some respects similar in nature to that belonging to peritoneal section, but it deviates in laying more stress on nourishment and tonics and less on intestinal rest, intestinal depletion and intestinal disinfection, *i.e.*, it deviates in the most essential parts.

[The author then records a case in which he was on the point of operating, but decided to try the method of treatment which he recommends. Great improvement resulted.]

I was unable to keep my patient under observation until cured, and am not attempting to prove that she is or will be cured. I am merely endeavouring to illustrate the effects of a certain method of treatment, as compared with abdominal section, on the progress of the disease. The progress of this case demonstrated to those of us who watched it that whenever the nourishment was pushed during the first two weeks, the severity of the symptoms was increased. From the time that she was put on the strictly liquid diet and salol, the improvement was marked and sustained. I am not discussing remote results, for that belongs to the future, but my experience with this and with similar cases that had been subjected to an operation has convinced me that in subacute as well as acute tuberculous peritonitis we must for the moment make the supporting treatment subservient to that of the inflammation, and that the treatment of the alimentary canal, in addition to the use of tonics and stimulants, is the one on which we should depend. If we destroy the sources of local irritation, Nature will often do the rest. We should endeavour to keep the alimentary canal as aseptic as we do during and just after an abdominal section, and this applies to the prodromic stage as well. Two or three liquid stools should be produced daily, by salines. Eight or ten grains of salol, guaiacol, or an equivalent, should be given from three to four times daily to aid in disinfecting the alimentary canal, and possibly in producing some effect on the bacilli. The diet should be entirely liquid, and should be such as to produce the minimum of gas or solid residuum in the intestinal canal. If it is thought wise to try to affect the disease by mercurials, calomel or blue mass would be better than inunction, because it would stimulate the action of the liver and aid in disinfecting the intestinal canal. The same rest in bed is necessary as after an abdominal section. In subacute cases the patient usually tries to be up and about, and this increases the inflammation. In subacute and chronic cases opium should never be given under any circumstances, except to check a diarrhœa that resists other medication. A proper restriction of the diet and hot fomentations, or an ice-bag, will relieve the pain, while bismuth and soda in connection with the salol and guaiacol will check a tendency to diarrhœa. Ordinarily I do not give bismuth, because I do not wish to check the action of the bowels. If the same rapid improvement can thus be obtained without the abdominal incision, then the incision will be indicated only in the severe or neglected cases in which the fluid can not be made to disappear by absorption. Even then tapping can be substituted by those who have not the facilities for an aseptic section. At least there will be no excuse for opening the abdomen early and before time for absorption has been given, and before the intestinal treatment has been thoroughly tried. If more innocuous specific germicides shall be discovered for tuberculosis, it is possible that they can be given by mouth or per anum in sufficient quantities, and for a sufficient length of time to destroy the bacilli in the tissues. I have depended mainly on intestinal asepsis. Perhaps in the future intestinal antisepsis may add to its efficiency. I would therefore recommend the following treatment: During the first few days of an acute attack the usual treatment for acute peritonitis would be indicated; after the first few days no opium, but the continuation of hot fomentations if necessary for pain and discomfort. Enough calomel may be administered to turn the stools to a dark green. As soon as the stomach will tolerate them, salines are to be given in divided doses to produce two or three soft or liquid stools daily. The diet must be fluid and in regulated quantities, so as to produce no intestinal gases, until the subacute symptoms have passed, and then only such solids may be allowed as will neither leave a solid residuum, nor produce gas either in the stomach or bowels. It is the want of strict and intelligent attention to what is taken as nourishment that leads to intestinal pain, distension, nausea, increase of the peritonitis and effusion and the necessity for an opiate. Salol, guaiacol or creosote are indicated both for their antiseptic action and for a possible effect on Koch's bacillus. The patients must be kept quietly in bed until all abdominal tenderness is gone and the p.m. temperature is almost normal, and they must be careful to be more quiet whenever there is any rise in temperature or indications of abdominal tenderness or pain. Tonics, stimulants and general remedies that may be found curative of tuberculous infection are not to be neglected. The patient must be kept under systematic treatment for several months, and should be cautioned to restrict her diet to food that will be easily digested and non-irritating to the bowels, for we know that nine out of ten people who are not careful in eating are almost constantly subject to more or less intestinal irritation.—*Journal American Medical Association, September* 9, 1899.

## 61.—JAUNDICE.

By T. Lauder Brunton, M.D., LL.D., F.R.S.,
Physician to St. Bartholomew's Hospital, London.

[The following is taken from Dr. Brunton's paper :]

Formerly two divisions of jaundice were recognised—one was called hæmatogenous and the other hepatogenous. The hæmatogenous jaundice was that due to increased formation of bile pigment within the blood and lessened excretion through the liver ; hepatogenous jaundice was due entirely to the diminished excretion from the liver. This view of the hæmatogenous origin of jaundice was given up for a while, but it has now reappeared under a somewhat altered form. The altered form is, that we no longer consider that bile pigment is formed in the blood, but we do consider that alterations in the blood may lead to a very greatly increased formation of bile pigment in the liver; so that we may really get a kind of jaundice, the starting point of which lies in alterations in the blood. Although the pigment may not be formed directly in the vessels, yet it is formed from altered blood, and the alteration takes place in the liver; so that there is certainly some ground for the old view of hæmatogenous and hepatogenous jaundice. The hepatogenous jaundices are, however, much more frequent, and much more practically interesting, inasmuch as the hæmatogenous is generally associated with such severe blood changes that medical art has very little power over it, whereas over hepatogenous jaundice we are frequently able to exercise a great influence and to do in many cases a great deal of good.

Jaundice is generally due to interference with the flow of bile out from the liver, and this may be due to many causes. One of the most common causes is a catarrhal condition, either of the duodenum or of the bile ducts. This catarrhal condition thickens the mucous membrane of the duodenum and tends to obstruct the opening of the common bile duct; or the catarrh may be present by itself, and so plug the duct by a thick cork, as we may term it, of mucus. This catarrhal jaundice is generally recognised by its having very few symptoms. The patient does not emaciate, and there is very little to be found on examination except that perhaps the liver is a little larger and a little more tender than usual, so that pressure upon it makes the patient wince. Catarrhal jaundice, as a rule, runs a course of its own, and although you may do some good, I confess that I do not think a very great deal can be done for it. As a rule, catarrhal jaundice runs a course of about six weeks. You may get it cleared away in less than that time, but I have never been quite certain whether its disappearance in a shorter time was due to the remedies or simply to the course of the disease.

There are two special classes of catarrhal jaundice, namely—(1) that which is due to thickening of the duodenum itself; (2) that which is due to the presence of mucus in the duodenum. In the case where the catarrh is present in the duodenum, it usually begins in the stomach, spreads to the duodenum, and then involves the bile duct; and the symptoms you get in such cases are, that the patient for two or three days before the jaundice is a little sick, a little out of sorts, has not very much appetite, and feels a little qualmish. In the cases where it seems to begin in the bile duct itself, there are no symptoms whatever, and the patient goes out one fine morning, and he meets a friend, who says, "You are very yellow to-day." He goes back and looks in the glass, and finds that he is yellow, but if it were not for the yellowness he would be perfectly well; and he comes simply to get the yellowness removed. As a general rule, you give him a blue pill, or a pill containing either mercury or calomel. One generally gives a mercurial pill with some rhubarb, podophyllin, colocynth, or other purgative, and a saline aperient to follow. This I suppose sometimes does good; at any rate, it is the general treatment, and you may then prescribe some nitrohydrochloric acid, bismuth, or salicylate of soda. All these drugs are used in cases of catarrhal jaundice; sometimes they do good and sometimes they do not.

[Dr. Brunton then gives details of a case in which the great omentum was enormously infiltrated with new growth, the lesser omentum was almost equally infiltrated. The whole of the peritoneal surface was dotted with new growths, especially well marked in the pelvic region, and some of this growth had become ulcerated. The common bile duct and portal vein were both lost in the great infiltration of the lesser omentum, and it was this new growth that was pressing upon both the portal vein and the duct. The author makes the following comments upon the case:] Here, then, is a case which shows you very clearly how far we are able to diagnose correctly certain conditions connected with the liver, and how far also we are liable to be mistaken. The indications which were afforded by the jaundice, the distension, and the emaciation, clearly pointed to some growth interfering with the flow through the portal vein and through the hepatic duct. The emaciation indicated that the nature of this growth was malignant. The slow and gradual onset of the jaundice seemed to show that there was no gall stone present, although, as we found afterwards, gall stones were there. The slow growth would indicate, I ought to say, that the disease was not due to gall stones, and not due to impaction of the gall stone on the duct. This long continuance indicated that it was not of a catarrhal nature. I was practically driven to the conclusion that there was a growth somewhere in the portal fissure, and probably it was at the head of the pancreas. So far as the diagnosis was concerned, *i.e.* that there was a growth pressing upon the portal vein and upon the hepatic duct, it was correct; and the exact nature of this diagnosis was also correct, in so far as a malignant growth was diagnosed. But the supposition was, that this growth started in the head of the pancreas, and then pressed upon the portal vein and the hepatic duct, whereas the growth appears possibly to have started around the gall duct. It might have been due to the pressure of gall stones, but it might also have been due, and in all probability was due, to the presence of an ovarian cyst which had ruptured and had caused irritation through the peritoneal cavity; for the whole of the peritoneum and the whole of the abdominal cavity were studded with new growths.

In this case, therefore, we have a well-marked instance of how far we can diagnose, and how far we are liable to error. The question of treatment in such a case was, of course, limited to the amelioration of symptoms. All that we could do was simply to evacuate the fluid when it became so great as to distend the abdomen, to relieve the weakness by the administration of stimulants, to give such foods as could be kept down, and, where necessary, to ease the pain by morphine. More than that we could not do, but in some other cases we can do a great deal of good; the consideration of such cases we must postpone till another occasion.—*Edinburgh Medical Journal, October*, 1899.

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## 62.—CASES OF TYPHOID CHOLECYSTITIS ENDING IN RECOVERY.

By J. M. Da Costa, M.D., LL.D., of Philadelphia.

It is only of late years that we have recognised cholecystitis in typhoid fever, and it is generally looked upon as a very serious complication. So, indeed, it mostly is. In a paper which I presented last year to this Association, "On the Significance of Jaundice in Typhoid Fever," and which has been published in its *Transactions* as well as in *The American Journal of the Medical Sciences*, July, 1898 (see *Retrospect*, vol. cxviii., p. 133), I stated the results of fifty-eight cases of typhoid cholecystitis I had collected to be thirty-nine deaths and fifteen recoveries, while in four the result was uncertain or not mentioned. It would, therefore, appear that typhoid cholecystitis is fatal in about two-thirds of the cases; in those that got well recovery in fully half the cases was the direct result of operative interference. Yet it is likely that, as we study the subject closely, and learn to recognise more readily this complication of typhoid fever, we shall find that the recoveries are more frequent than supposed. It is from the very grave cases, which alone have been mostly published, that our conclusions have been drawn. To the list of recoveries from typhoid cholecystitis I can now add three cases, two of which happened in soldiers and one in a young girl. They were all under observation at the Pennsylvania Hospital. [The details of the cases are omitted here.]

In the first case, of a man, aged 32 years, in whom the profoundest typhoid fever infection was manifest, the cholecystitis was comparatively light. While there was pain in the region of the gall-bladder and sensitiveness, there was no tumour, and, except for jaundice, which, though slight, attracted attention, it is very likely that the disorder would have been overlooked. In the next case the symptoms were much more marked, and a tumour was evident.

The second case, in a man, aged 23 years, is instructive in showing how pain and tenderness, and even tumour, precede the icterus, which, indeed, may only manifest itself by bile in the urine or be wholly absent. The temperature did not rise with the complication. It was high when this started, as it had been throughout the case, and declined, rather than advanced, with the decided manifestations of the malady. The symptoms were very clearly marked, but not typically violent, as they were in the next case.

In the third case, in a girl, aged 8 years, the violence of the pain stood out as the most prominent symptom. I have never in any instance of typhoid fever seen it equalled, and the child often shrieked with it. There was no doubt in her mind of its seat; when questioned she always put her hand to the region under the ribs on the right side. The pain was aggravated by the incessant vomiting. In the other cases reported in this paper the jaundice was slight; here it was very marked. The gravity of the symptoms made me think of asking one of my surgical colleagues to perform an operation; but as, when I was considering the propriety of surgical interference, improvement began to show itself, this was deferred, and the child recovered without. From the absence of sweating and chills—though this is not conclusive—I believed the cholecystitis not to be purulent, which influenced my decision. On the whole, this is the most marked case of typhoid cholecystitis ending in recovery which I have met with. It is worthy of note that it occurred after convalescence had set in. Cholecystitis in typhoid fever is a complication generally arising in the third or fourth week of the fever. In one of the cases reported in this paper it came on in the relapse.

The treatment in the cases detailed consisted for the most part in the administration of fractional doses of calomel, frequently repeated, in combating the nausea, and in the local use of ice or of poultices. The former is to be tried first, and is, I believe, the more efficient. Counter-irritation, with turpentine stupes or with iodine, may also be used, and Case 1 thought he derived much benefit from this. For the relief of the pain, hypodermatics of morphine may be necessary, and, as in Case 3, the circulation may have to be supported by hypodermatics of strychnine and of digitalis.—*American Journal of the Medical Sciences, August*, 1899.

## 63.—THE ETIOLOGY OF CIRRHOSIS OF THE LIVER.

By H. D. Rolleston, M.A., M.D., F.R.C.P.,
Physician to St. George's Hospital and Lecturer on Pathology at the Medical School.

[Only portions of Dr. Rolleston's suggestive paper are reproduced here.]

Cirrhosis of the liver is the result of some poison, or very possibly poison-producing bodies, such as micro-organisms, reaching the liver. The factors in question may travel to the liver either (1) by the portal vein, or (2) by the hepatic artery; in other words, they may be derived from the alimentary canal or from the general circulation. When the active agent arrives by the portal vein the resulting cirrhosis is usually of the ordinary venous or portal type; when the liver is affected secondary to an arterial infection or toxæmia the cirrhosis is often of a more mixed type, and then resembles that of biliary cirrhosis. It is, however, true that in some instances where the poison arrives by the hepatic artery the cirrhosis is of the ordinary type.

(1) The poisons that reach the liver by means of the portal vein may be divided into three categories:—(*a*) The poisons introduced into the intestinal tract from without: (i.) alcohol, and (ii.) other injested bodies. (*b*) Those manufactured in the alimentary canal as the result of faulty digestion and fermentation. (*c*) The poison of congenital syphilis conveyed by the umbilical vein.

(2) *Micro-Organisms absorbed from the Alimentary Canal.*—Cirrhosis thus produced would be described as septic or infectious in contradistinction to toxic cirrhosis, which is due to the action of poisons without the presence of microbes in the liver. Such a suggestion is highly probable, but cannot be proved at present. Adami, while investigating the Pictou cattle disease, found intercellular or pericellular cirrhosis accompanied by swelling of the peri-portal and retro-peritoneal glands, and œdema of parts of the intestine. These lesions were associated with a minute bacillus which, while very closely allied in form and character to the colon bacillus, is, as shown by sub-cultures extending over three years, a distinct species. Adami has found the colon bacillus almost constantly in human livers. When the livers are healthy the bacilli appear to have been killed by the bactericidal action of the liver cells. In progressive cirrhosis there are, in addition to dead bacilli, some areas where they appear active. This suggests the possibility that virulent colon bacilli may under conditions of diminished resistance of the liver cells, such as may be induced by alcohol, lead to cirrhosis.

(3) *Cirrhosis due to Poisons in the General Circulation and reaching the Liver by the Hepatic Artery.*—This cirrhosis may be spoken of as toxic and due to the action of poisons on the liver. Clinically it has been suggested that cirrhosis may be set up by the specific fevers, typhoid fevers, scarlet fever, measles and variola. In typhoid fever the poison is regarded as being derived from the alimentary canal; but in cases of typhoid infection without intestinal lesions the poison might reach the liver by the hepatic artery. Klein described acute interstitial hepatitis in scarlet fever, and quite recently Pearce has met with focal necroses of the liver cells; this is analogous to scarlatinal nephritis, but it probably is a transient condition, and clinically there is little relation between scarlet fever and hepatic cirrhosis.

(4) *Cirrhosis due to Micro-Organisms in the General Circulation reaching the Liver and there producing Poisons that set up Cirrhosis.*—Usually in hæmic infection the liver changes are extremely acute and give rise either to suppuration or to widespread degenerative changes allied to acute yellow atrophy. In cases of more chronic blood infections a certain amount of cirrhosis may result, and possibly if the original cause is removed, the resulting hepatic lesions may remain permanent, or from additional factors become progressive. Malarial cirrhosis is an example of the local hepatic effects following hæmic infection. To a slighter extent it has been described in infective endocarditis and in puerperal septicæmia.

*Conclusion.*—Experiment shows that a large number of poisons are capable of giving rise to changes in the liver comparable to those of cirrhosis. Often, it is true, these lesions are early, or, at the best, not well marked. But the facts are of value as indicating that cirrhosis in man may reasonably be considered as the result of a toxic process. These poisons may be absorbed either from the alimentary canal, and then reach the liver in a comparatively concentrated form, or they may travel to the liver by the hepatic artery; the dose is then comparatively diluted as compared with the former class. The foregoing evidence points to ordinary cirrhosis in man being generally due to poisons travelling by the portal vein. Of these poisons alcohol is rather an antecedent condition than a *causa vera*, and acts indirectly or in an accessory manner. The possibility of cirrhosis being definitely due to micro-organisms is one that must be faced; from analogy it is most probable, but at present, as in the case of syphilis and new growths, it has not been certainly established. It is also highly probably that poisons, or perhaps micro-organisms, reaching the liver by the hepatic artery may give rise to changes of a cirrhotic nature.—*Quarterly Medical Journal, July*, 1899.

## 64.—HEPATIC TUBERCULOSIS.

By F. Craven Moore, M.D., M.Sc. Vict.
Assistant Lecturer and Demonstrator of Pathology,
Owens College ; &c.

[The following is taken from Dr. Moore's interesting paper :]

Corresponding to the "Solitary Tubercle" of the brain, we have in the liver, lesions which stand in contrast to the miliary tubercle by reason of their greater size, more chronic course, more marked tendency to caseation, and, in some cases, by their apparently primary sequence. This type of lesion, which is usual in the livers of such animals as cattle, monkeys, dogs, pigs, and birds, occurs not very frequently in man, where it assumes one of two forms, according to its anatomical relations. In the majority of cases the lesions apparently develop in close relation with the bile ducts, and then in their typical form appear as cavities with caseous walls and softened bile-stained contents ; in other cases, and these are very exceptional, the lesions have no such relation to the bile ducts, and they present much more closely the characters of the "solitary tubercle" as it is met with in the brain. Owing to the striking difference in the morbid anatomy of these two forms, and perhaps more so owing to the rarity of the latter, they have generally been considered under distinct headings, The former have been termed simply "Tuberculous cavities" or "Tuberculosis of the bile ducts," "Tubercular cholangitis" or "Tubercular periangiocholitis," according to the view held as to their relation to the bile ducts ; whilst the latter are known as "Local tuberculosis" or "Solitary tubercles of the Liver."

1. *Tuberculous Cavities of the Liver.—Tuberculosis of the Bile Ducts.*—The lesions which in some cases have been associated with tubercular ulceration of the intestine, consist of nodular new formations scattered through the hepatic substance. They vary in size from a quarter of an inch or less to one-half, or in very few instances one or two inches in diameter, In number also they vary ; in the majority of the recorded cases they do not appear to have been numerous, but Fränkel describes a case in which one could hardly find a finger's breadth of unaffected liver tissue. The large nodules consist of a firm fibrous tissue wall continuous with the fibrous tissue of Glisson's capsule, lined on its inner aspect by a layer of tuberculous granulations in various phases of necrosis; the central part of the nodule consists of a yellowish-green amorphous débris frequently mixed up with mucus. In the smaller nodules the centre is often occupied by a small cavity, the remains of the bile duct in relation to which the nodule has developed. Microscopically the remains of bile duct epithelium

always forms a conspicuous feature of the central parts of a nodule. As regards the histogenesis of these lesions considerable uncertainty still prevails. Simmonds, who was one of the first accurately to describe the lesions, regarded them as the result of an ascending infection of the bile ducts from the intestine. He supposed that the tubercle bacilli passed through the epithelial lining of the bile ducts without producing any lesion—Cholangitis—and penetrating into the periductile connective tissue, there called forth an eruption of tubercles which only involved the bile duct as a result of their increase and extension. From the analogous condition, peribronchitis, he suggested the name "Periangiocholitis tuberculosa" Schmauss and others have termed the condition "Cholangitis tuberculosa." More recently other observers as Sabourin, Sergent, and Kotlar have sought to explain the lesions as the result of infection of the periductile tissue either by the portal vein or hepatic artery; invasion of the bile ducts and any cholangitis being secondary and the result of the extension of the process. Fletcher, in his recent paper, finds himself in harmony with these observers and in his case regards the source of infection as an old tubercular ulcer of the intestine, and the path of infection as the portal vein. In many of these cases it has been found that the bile duct lesions are associated with, but independent of, a more recent miliary tuberculosis of the liver.

2. *Solitary Tubercle of the Liver.*—This form of conglomerate tubercle, not modified by any connection with the bile ducts and which presents morbid characters identical with the better known olitary tubercle of the brain, appears to be "one of the rarest of pathological curiosities." [The author then gives details of a case of cancer of the pylorus associated with conglomerate tuberculosis of the liver, spleen, and cæliac glands.]

The tuberculous lesions themselves are chiefly of interest on account of the rarity of their morbid type. Apart from the older observations, which are not free from ambiguity, there appears to be only some four cases of solitary tubercle of the liver on record, viz., that of Clement, one forming the basis of a dissertation by Zehden, and two, more recently described by Simmonds. Under the title of "Local Tuberculosis of the Liver," Orth has described two cases which very doubtfully merit this appelation. One, which was not examined microscopically, has been regarded by Birch Hirschfeld and others as a case of gummata of the liver, whilst the other appears almost certainly, from the histological details published, to be a combination of secondary deposits of carcinoma and miliary tubercles in the liver. In all the cases the condition had not given rise to any special manifestations during life, and its presence has only been discovered post mortem.—*Medical Chronicle, July*, 1899.

# DISEASES OF THE URINARY ORGANS.

## 65.—RENAL CASTS—THEIR SIGNIFICANCE AND DETECTION.

By Jo. H. Linsley, M.D., Burlington, Vt.

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[From Dr. Linsley's paper. The author makes special reference to the granular kidney.]

This disease occurs frequently about middle adult life, is found in apparently strong, healthy, and well-nourished individuals, and is one of the most insidious of all physical derangements. In the great majority of cases it is well advanced before it is detected, and in many cases even before the advice of a physician is sought.

Among the first symptoms of granular kidney noticed are a tendency to micturate once or twice during the night, slight disturbances of digestion, very slight dyspnœa on exercise. There may or may not be headache, which is not confined to any particular portion of the head. If the person is one of nervous temperament there is apt to be more or less neuralgia in various parts of the body. The urine at this time may be normal in quantity, colour, specific gravity, and reaction. The amount of urea excreted may be normal or only slightly below the average amount, and the other solids entirely normal. Generally there is no albumin or peptone, although occasionally there is a mere trace ($\frac{1}{40}$ of one per cent. by weight. or less) of the former. The only sediment observable to the unaided eye is the usual light—nearly transparent—cloud of mucus, which appears just below the middle of the fluid after the urine has stood in a conical glass, or beaker, for an hour or two. After standing in such a glass vessel a few hours—or, better still, after sedimentation with a centrifuge—if some of the sediment is placed under the microscope, and the instrument manipulated as will be described later, a greater or less number of hyaline casts will be seen, generally a few uric-acid crystals and crystals of calcium oxalate, often a few scattering red blood cells, a greater or less number of leucocytes and squamous and possibly some round epithelia. The hyaline casts may be very few in number, not more than five or six being seen in the preparation ; but these and the blood cells are of the greatest significance.

*Detection of Casts.*—Before examining a urine for casts it should either be allowed to stand in a covered conical glass for at least three hours, or, what is better, subjected to mechanical sedimentation in a centrifuge. The latter has the advantage of allowing an inspection of the sediment in a fresh state, an important matter when dealing with a very acid or alkaline urine, and also saves valuable time to the investigator. Whether obtained by either of these methods, a small portion (a few drops) of the urine from the bottom of the fluid, and which contains the sediment, is removed with a pipette and placed on a clean glass slide. No cover-glass is used in this manipulation. The slide containing the specimen is then placed on the stage of a microscope and a ¾-inch or ½-inch (No. 2 or No. 4) objective brought into the optical axis of the instrument. A higher power of the microscope should never be used for the detection of casts in the urine. The next step, the illumination of the specimen, is so important a procedure that without careful attention to the details of its application no casts will be seen, even though there be hundreds of them on the glass slide under observation. Proceed as follows: reduce the opening in the diaphragm until the specimen is only faintly illuminated; turn the mirror, using its concave side, in such a way as to direct oblique rays of light through the slide and objective. The manipulation is extremely simple and can be acquired in a very short time by any one at all conversant with the use of the microscope, yet I have seen a surprisingly large number of failures to detect hyaline casts in a urine containing them in abundance, because of the non-observance of the methods detailed. When hyaline casts are present in a specimen which has been mounted in this manner they appear as sharply defined, somewhat refractive, and perfectly transparent diminutive logs with rounded ends. After carefully examining the specimen with the low power, a cover-glass may be applied, the superfluous urine removed with a piece of blotting, or filter, paper, and the specimen investigated with a ⅕-inch or ⅑-inch (No. 5 or No. 7) objective. In this case more light is needed, and the opening in the diaphragm must be enlarged. The higher magnifying power allows the study of the structure of any casts or epithelial cells, and the detection of pus or blood cells and bacteria, but it should never be employed until after a thorough examination with the low power. I might call your attention to the fact that in many cases of Bright's disease the patient will void urine which may be free of any evidence of the disease, hence the very great necessity of subjecting a sample of the mixed twenty-four hours' urine for analysis.—*Medical Record, October* 21, 1899.

## 66.—NEPHRALGIA.

By Dr. Joshua C. Husband, of Boston.

[The following is taken from Dr. Husband's paper based on cases in the Massachusetts Hospital. Perhaps in the future the $x$ rays examination will be of service in this class of case.]

*Diagnosis.*—As the symptoms are often those of stone in the kidney, the differential diagnosis is extremely difficult and rarely made. The age of the patient is of no help, as the average of seventy-one cases of renal calculus is thirty-three and seven-tenths years, as compared with thirty-seven for nephralgia. Males, it is evident, are about three times more commonly affected with nephralgia than women, while in stone the proportion is about equal,—males forty-two, females thirty-four, out of seventy-six cases. In nephralgia the symptoms referred to the left kidney in six cases and to the right in seventeen, whereas, on the other hand, stone was found in the left kidney in thirty-two cases as against thirty-seven in the right. The pain in nephralgia in nineteen males radiated to the testicle in nine, while in thirty-two stone cases the pain was referred to the groin, penis, or bladder in but nine. From this it follows that the involvement of the testicle is a little more common in nephralgia. The urine gives the greatest aid in diagnosis. In twenty cases of nephralgia, the urine was free from blood, pus, or crystals in seven, or in almost one-third of the cases, whereas in fifty-seven cases of stone, it was free from the above abnormal elements in but two. Stone in the kidney may occur, of course, with a perfectly normal urine, for only where it is forming are crystals to be expected in the urine (Ranshoff), and only while it is hollowing out a place for itself in the kidney, or growing in a calyx or the pelvis, is there a pyelitis. As soon as it becomes encysted the inflammation may stop (Morris). The urine may also be normal in those cases where the flow is stopped, at least temporarily, from the diseased kidney by the impaction of a stone in the ureter. However, in most cases where the symptoms are sufficiently persistent and severe to warrant the diagnosis of stone the urine will be found abnormal. With regard to distinguishing the urine of a pyelitis from that of a cystitis, it is said that the reaction in the former is usually acid, while in the latter alkaline. Cystoscopy may be of aid in determining which kidney is diseased. The Röntgen ray is of only slight help, for (Ringel) it has been found experimentally that only oxalate of lime or uric acid calculi cast a shadow on the plate, while phosphatic stones offer no resistance to the passage of the rays. For convenience I have tabulated the three aids, and practically they are the only ones to the differential diagnosis.

| NEPHRALGIA. | RENAL CALCULUS. |
|---|---|
| Three times more common in males than females. | Equally. |
| Right three times as often as left. | Equally. |
| Urine normal in one-third the cases. | Urine normal in one twenty-sixth the cases. |

The diagnosis from tuberculosis of the kidney may at times be difficult. Of course, the discovery of tubercle bacilli in the urine or a reaction following the injection of tuberculin are important aids. A negative examination of the urine for bacilli is of slight importance, and in such a case the catheterisation of the ureters and the injection of the two specimens of urine into guinea-pigs should be carried out. As primary renal tuberculosis is rather rare, there will often be some additional foci in the course of the genito-urinary tract which can be more definitely demonstrated.

*Operation.*—Ordinarily the diagnosis of stone will be made and the operation undertaken for its relief. If none is located by palpation or acupuncture, which is a rather inexact procedure, the kidney should be incised and examined carefully, not only with the finger but by a probe. As many of the primary tubes are more than an inch in length and no larger than a No. 10 catheter, while the secondary tubules are as fine as knitting-needles, a thorough examination by the finger alone is impossible (Greig Smith). The ureter should also be probed, as the stone may previous to the operation have passed into it or have been forced out of the kidney by the manipulations. If nothing abnormal can be found, the capsule should be split from pole to pole unless the incision into the kidney has divided it sufficiently. It is advisable, I think, to anchor the kidney in place before closing the operation.

*Prognosis.*—As only a few unsuccessful cases, where the pain has returned after varying intervals (Wright), or where a stone has been found after a secondary nephrectomy (Morris and Shepherd) have been published, no percentage of cures can be made. It must, however, be acknowledged, after considering the cases at the Massachusetts General Hospital, that cure does follow in a certain proportion of cases. If any abnormal position or mobility has been detected and rectified by the operation, the chances of a cure are so much the greater. The operator, however, must remember that in a few cases the symptoms of a diseased kidney are transferred entirely to the well side.—*Annals of Surgery*, 1899, *p.* 192.

## 67.—THE PROGNOSIS OF NEPHRITIS.

By RICHARD C. CABOT, M.D., and FRANKLIN W. WHITE, M.D., Boston.

[From Drs. Cabot and White's paper. The authors base their interesting paper upon 332 cases in the Massachusetts General Hospital, which were followed up, and also upon the details of 191 cases furnished by practitioners.]

Two hundred and sixty-nine of our cases have died. The average duration of these fatal cases from start to finish was nineteen months. Forty of our cases lasted less than two months from the first symptom to the time of death. One hundred and fifty-two cases lasted from two months to two years, and 46 cases from two to five years. The longest cases in our series are seven, ten, twelve, fourteen, sixteen, twenty, and twenty-three years. Of the fatal cases, 210 were of the type of chronic diffuse nephritis, under which we include those ordinarily classed as chronic parenchymatous nephritis ; 52 were of the interstitial type. In the list of 91 cases of long duration sent us by physicians, 27 had lasted from ten to fifteen years; 16 from fifteen to twenty years ; and six over twenty years, namely : one, twenty-two years ; three, twenty-five years ; one, twenty-eight years, and one, thirty years. The number of acute cases in our series was so small that it has seemed best to discard them. It is a notable fact, in this connection, that for the last five years the number of cases diagnosed as acute nephritis at the Massachusetts General Hospital has steadily diminished. We interpret this to mean that cases formerly called acute are now considered as an acute exacerbation of a chronic case.

*Relation between Etiology and Prognosis.*—The nine cases in which there was a distinct history of lead poisoning have generally run a comparatively long course. The same is true of the 16 cases in which syphilis occurred. Some of the shortest cases, if we are to judge simply by the duration of definite symptoms, were those associated with arterio-sclerosis, in which fatal uræmia came on out of a clear sky and killed the patient within a week. Curiously enough, the 57 cases in which the only possible etiological factor obtainable was heredity ; that is, a family history of nephritis, dropsy, apoplexy, heart disease, or phthisis, seemed to run a relatively long course. We were unable to observe any relation between the duration of cases and the occurrence of such etiological factors as abuse of alcohol, infectious diseases, pregnancy, or exposure to cold. In the vast majority of our cases no cause of any kind could be traced.

*Effect of Complications upon Prognosis.*—Complications were the cause of death apparently in 44 cases out of our 332.

Pneumonia and pericarditis were the most frequent of these and phthisis next. Pneumonia and pericarditis have occurred with about equal frequency, and our statistics indicate that pneumonia is equally common as a cause of death in cases of short and of long duration, while pericarditis seems more apt to carry off a patient at a comparatively early stage of the disease. Thus of the 11 cases ending fatally with acute pneumonia, five cases had a duration of less than two years, and six cases of two years or more. On the other hand, only two of the 15 cases ending with acute pericarditis had a duration of two or more years. As cases of nephritis get on past the first year the dangers of such complications as cerebral hemorrhage, hemiplegia, and gangrene increase.

*Relation of Dropsy to Prognosis.*—It has been said by good authorities that the prognosis in diffuse nephritis is worse in cases where dropsy is marked, but in 47 cases of our series, in which no dropsy occurred, the average duration was ten months, compared to twenty-three months, which is the average duration of the cases in which dropsy was present. In short, the course of the disease in the cases of diffuse nephritis without dropsy was less than half as long as in the cases with dropsy. Dropsy is not sufficiently common in interstitial nephritis to be of much prognostic value.

*Relation of Retinal Changes to Prognosis.*—Good authorities state that cases of chronic nephritis rarely last more than two years after the presence of hemorrhages in the retina. This is borne out by our series of cases, of which only one lived over two years from the time at which hemorrhages were seen in the fundus oculi. In this case, however, the patient lived five years and seven months, after the date at which retinal hemorrhages in both eyes were observed by Dr. Wadsworth at the Massachusetts General Hospital.

*Cardiac Enlargement and Prognosis.*—Occurrence of hypertrophy of the heart is universally acknowledged as marking the advance of the disease beyond the curable stage. This is borne out by our statistics of the 104 cases in which cardiac enlargement was demonstrated. Only three lived more than two years from the date at which the enlargement was demonstrated. We will summarise our conclusions as follows: (1) Chronic nephritis is not an absolutely incurable disease. Recovery occurs in rare instances. (2) Chronic nephritis may exist for a long series of years without causing any apparent constitutional disturbance. (3) The average duration in 332 cases of chronic nephritis was nineteen months. (4) Acute nephritis is less common than has been supposed; many cases formerly diagnosed as such have been shown to represent exacerbations in chronic nephritis.—*Boston Medical and Surgical Journal*, *August* 10, 1899.

## 68.—ESSENTIAL HÆMATURIA.

By M. M. Malherte and Leguen.

Up to late years, the papers read on hæmaturia were divided into two classes, essential and symptomatic. This latter, the more frequent and the better known, depended on some well-defined cause; while the former seemed independent of any lesion of the urinary apparatus and appears to constitute simultaneously symptom and malady. To distinguish that affection from the other, the term "essential hæmaturia" was invented. But could hæmaturia really exist independently of a lesion of the renal organ or of a more or less established disease? Such was the question the authors proposed to treat, after passing in review the different causes of symptomatic hæmaturia, which were of two orders—general and local.

*Infectious Maladies.*—Hæmaturia was frequently observed in the course of infectious maladies, and more especially in those cases where the fever ran high; it constituted generally the ultimate period of the affection and rendered the prognosis very grave. The blood could come from any position of the urinary tract, but it was probable that the seat of the hemorrhage was the kidney. Where the cause was local the hæmaturia could derive from the urethra, the prostate, the bladder, the ureter, or the kidney. Abundant hæmaturia had its cause exclusively in the bladder or the kidney, and was provoked habitually by calculi, tuberculosis, neoplasms, or retention, more rarely by traumatism, inflammation (nephritis) or parasites (hot climates). Such were the principal causes of hæmaturia resulting from a manifest lesion of urinary apparatus and notably of the renal organ. Whether it were a case of traumatism (calculus), of inflammation (nephritis), or of a neoplasm there was a factor which in the pathological physiology of hæmaturia intervened at each stage; it was congestion. Congestion played in urinary pathology a very effective rôle. M. Guyon had frequently insisted on that point. It was that which determined frequently the hæmaturia modifying the clinical aspect of the symptom, and troubling the practitioner by a disconcerting paradox.

*Essential Hæmaturia.*—After having passed in review the great causes of symptomatic hæmaturia, the authors treated of essential hæmaturia, which, in its clinical characters they said did not present any particular sign. It was frequently very abundant, so as to produce anæmia, and was rebellious to all treatment. What was in reality essential hæmaturia? In pathology every phenomenon had a cause, and although the cause could not be determined, it did not follow that it did not exist. When hæmaturia occurred it should in some way have its *raison d'etre.* If it was not found it was because the insignificant lesion had passed unperceived, and that lesion was almost in every case to be found in the kidney, consequently essential hæmaturia did not exist in fact. The predominating character of pseudo-essential hæmaturia was that it did not resemble any of the forms habitual to that of calculus, neoplasm, or tubercles. Abundant and continual, it was not influenced by rest or motion, and appeared at first as renal hæmaturia, but other symptoms were sought for in vain. The treatment of that kind of hæmaturia depended on the cause, but the cause was unknown ; therefore an exploratory incision became necessary to complete an imperfect diagnosis. It was only in the cause of that incision that nephrotomy or nephrectomy could be best decided upon.—*The Medical Press, October* 25, 1899.

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## 69.—NEPHRITIS WITHOUT ALBUMINURIA.

By Charles Godwin Jennings, M.D.,
Detroit, Mich.

[The author gives details of two cases occurring in patients aged 40 and 55 respectively. He then quotes the opinions of current writers such as Tyson, Loomis Strümpell Osler, Dickinson, Roberts, von Jaksch, Simon, and others, and thus proceeds :—]

From the writings of authorities it is shown : (1) That very rarely chronic parenchymatous nephritis has been observed in which albumin and casts have been absent from the urine for certain periods of time. (2) That chronic interstitial nephritis is characterised by a urine in which albumin and casts appear in smaller quantity, and that frequently both disappear for short or long periods of time. (3) That the appearance and disappearance of casts and albumin in nephritis are synchronous—in other words, that the pathological changes that cause albuminuria and cylindruria are identical. Simon particularly is emphatic on this point.

The journal literature of the last few years would seem to show that it is necessary to recast this generally accepted opinion of the relationship of albuminuria and cylindruria. Numerous cases of nephritis have been reported in which albumin has been absent from the urine, and in which a more or less abundant cylindruria has been continuous. It is unnecessary here to cite these cases in detail, but they are too numerous and come from too good authority to be put aside, as Simon would put them, with the statement that albumin was not found because of imperfect or careless analysis. In the two cases here reported I feel certain of the absence of albumin. In my routine urine analyses I habitually use several of the so-called more delicate tests for albumin, and am fairly familiar with the technique of their use. While it is true that the pathological condition which determines the presence of albumin in the urine determines also the presence of casts, it must be admitted that exceptionally renal epithelial changes occur that produce cylindruria without albuminuria. Among the most interesting of these articles are two papers by Dr. D. D. Stewart, one on the "Occurrence of a Form of Chronic Bright's Disease other than Typical Fibroid Kidney, without Albuminuria," read before the Pan-American Medical Congress, and the other supplemental to the first, published in the *Medical News* of April 14, 1894. In these articles Dr. Stewart reports a series of cases presenting a clinical history "typical of no distinct form of chronic nephritis, though their trend is suggestive of granular or cirrhotic kidney, or of the form described by Delafield as chronic diffuse nephritis without exudation." Of the clinical and pathological characters of this distinct form of nephritis, Dr. Stewart writes: "What I especially desire to emphasise is that there certainly exists a class of cases, probably of common occurrence with symptoms which place them in a group entirely distinct from what is known as chronic interstitial nephritis. In these the most aggravated symptoms of renal inadequacy may be present, such as are common only in an advanced stage of kidney disease, and yet albumin remains totally absent from the urine. That these cases have a pathology distinct from the so-called arterio capillary fibroid kidney (the red granular or contracted kidney, or interstitial or catarrhal nephritis) I have no doubt; but the most exact post-mortem investigation into the character and distribution of the histologic change is necessary in cases which, dying, still preserve the usual symptom-grouping, in order to determine the actual differences. In cases of the sort that I have described, therefore, the exact pathologic footing must remain a matter of conjecture until a series of necropsies are obtained with death occurring before marked change in type is manifest, before generalised fibrosis has become evident, or albumin has appeared in the urine. This may be possible only after a period of years, but will be the earlier the greater the number of these cases that are recognised, collected, and followed. Light may only be thrown on the pathologic position of such cases through death from an intercurrent malady. It certainly seems logical that a group furnishing more or less prominently symptoms so distinctive and separable from those of the well-recognised forms of chronic nephritis has a distinct pathology. With an oliguria as persistent and as marked in certain cases as in the most outspoken type of chronic parenchymatous nephritis, and with a urine as concentrated, yet with absence of cardiac debility and of dropsy to indicate its source, there occur as grave continuous symptoms of renal inadequacy—those, indeed, of pronounced uræmia. These are associated, too, as in chronic parenchymatous nephritis, with as marked diminution in urinary solids, notably diminution in urea and mineral ingredients, indicating undoubted secretory involvement; yet totally unlike what is distinctive of parenchymatous nephritis, albumin is so persistently absent from the urine, even with the existence of the aggravated symptoms of renal incompetency, as to clearly indicate that its presence need form no part of the assemblage of symptoms or have any relation to the morbid condition."

To review my two case histories in the light of this added knowledge: Case 2 presents a fairly typical history of chronic interstitial nephritis. I had examined the urine several times before the certain evidences of renal trouble were discovered, expecting to find this evidence, but had my attention turned from the kidneys by the continual absence of albumin. The casts were found in the centrifuged sediment, and it may be that the search for them in the previous analyses was not sufficiently careful. This case shows the importance in the diagnosis of renal disease of the qualitative estimation of urinary solids in a series of twenty-four-hour specimens, and the most careful search for casts even when albumin is absent. In connection with the cases of Dr. Stewart, Case 1 is of particular interest. Here the diagnosis was very puzzling. The recent development of the symptoms suggested an acute inflammatory or degenerative lesion, but the urinary findings were out of harmony with such a diagnosis. The absence of dropsy and other uniform phenomena negatives a chronic parenchymatous nephritis. The abundance of hyaline and granular casts, the renal epithelium, and the leucocytes were suggestive of this trouble, but albumin was wanting—symptoms not harmonising with the diagnosis of cirrhotic kidney. I was not familiar with the article of Dr. Stewart until this case history was written, so I was compelled reluctantly to make a diagnosis of cirrhotic kidney. Another interesting feature of the case is the presence of profound uræmic symptoms with a fair urea excretion. The lowest excretion was 124 grains. Dr. Stewart especially mentions the tendency to uræmic symptoms in these cases, and it would seem not improbable that the epithelial structures implicated in the pathological process were those that have to do with the excretion of some uræmic symptom-product or products other than urea.—*Medical Age, August* 10, 1899.

## 70.—CHRONIC BRIGHT'S DISEASE.

By Arthur R. Elliott, M.D.,
Chicago; Professor of Urinary Diseases, Post-Graduate Medical School.

[From Dr. Elliott's paper.]

Granular kidney has been called a disease of middle life. It is true that it is most often recognised during that epoch, but it may have existed for years and have had its origin in early life. It is an essentially chronic process, indeed one of the most chronic of all affections, extending over a period of years, often ten, fifteen, or even twenty in number. In the vast majority of cases it is not during its early stages that its presence is discovered, but only after the morbid changes have so far advanced as to interfere decidedly with the functional capacity of the kidneys. This is mainly due to the fact that until that point is reached no symptoms referable to the kidneys as the seat of trouble are apparent, and also partly, I am satisfied, to an insufficient appreciation of the elusive early symptoms of the disease, for at no time in its progress will careful examination fail to elicit evidence of its existence. It is certain that there is a far greater supply of renal gland tissue than is ever required in physiological living, and which can be dispensed with without discommoding the individual so long as ordinary conditions prevail. The degenerative changes which are the special feature of the granular kidney advance very slowly, and may exist months and even years before the renal tissue has been so far encroached upon as to render the organs incapable of the proper performance of the work demanded by normal conditions. It is then only that a distinct and unequivocal symptom complex becomes apparent. Ralfe indeed states that it is only when two-thirds of the kidney substance has been destroyed that toxæmic symptoms become prominent. When this point is reached the symptoms of a chronic advancing uræmia combined with distinct urinary abnormities render the condition very easy of recognition, but, unfortunately, by this time the period for usefulness has to a large extent gone by, and all that remains is to compromise with existing conditions, conserve the badly damaged organs, and prolong an existence often miserable enough. Such a point is not usually reached until years after the degenerative lesion was first originated. If by good fortune the disease is discovered in its incipiency, before the organs are greatly hampered, a very promising field is open to our endeavour, and by judicious management further advance may be arrested or so far retarded as to enable the patient to live in comfort and usefulness many years. Our attitude toward the disease must not be one that regards it as a purely renal lesion. Primary it may be so, but it soon becomes much more than that. The changes accompanying its development are widespread, seriously involving the circulatory organs and disturbing many of the symtemic functions.

It is not too much to say that the majority of cases of chronic interstitial nephritis are never discovered, and that apoplexy and heart disease frequently usurp its rightful place upon mortality records. This is not because the diagnosis is difficult, but because there is little in the symptoms to draw attention to the kidneys. The initial stages of the disease present the greatest difficulties to a precise diagnosis, and it is this phase I would discuss. The early symptoms are indefinite and not such as to excite the alarm of the patient, so that the physician is seldom consulted until the disease is well advanced. If the patient seeks early advice it is usually for the relief of some symptom not referable to the kidneys. Opportunities will always exist and frequently arise that will enable us, if our attention is awake to the significance of certain alterations, to discover the disease. Thus granular kidney is the special condition which is likely to be accidentally revealed by examination of the urine for life insurance. Likewise the systemic disturbance of acute febrile disorders may intensify latent symptoms so as to lead to its discovery. Many an obscure nervous, circulatory, or digestive condition in the middle-aged will become easy of interpretation in the presence of a thickened artery, heightened tension, and polyuria. The frequency of this degeneration during the latter half of life certainly warrants an invariable analysis of the urine whenever obtainable, although there may seem no special indication for it.—*Medical Record*, *July* 15, 1899.

## 71.—RENAL TUBERCULOSIS.

[The following is taken from Dr. George Parker's critical review.]

Renal tuberculosis has been largely relegated to the care of the surgeon, partly as a local affection which should be removed as early as possible lest the bladder and general system should be affected, and partly from the little success which has attended medical treatment of tubercular diseases in the past. It is an interesting question, as our treatment of phthisis becomes more and more perfect, how far this view must be altered? In other words, can we expect such local affections, at least in their earliest stages, to disappear under the increased resisting power of the tissues brought about by fresh air, increased nourishment, climatic and other aids? How many instances of spontaneous cure and of recovery, more or less complete, under improved conditions of general health are on record? Enough to show that as great results may be hoped for with the improved methods as in phthisis.

When symptoms do occur, they may include paroxysmal or continued pain in any part of the urinary tract, hæmaturia with acid urine, the presence of a tumour, the signs of bladder irritation, and tubercle bacilli. Brown remarks, as important in an early stage, the curious pallor of the face, a slight evening rise of temperature, and an increase in the water excreted. The last is probably compensatory to the destruction of part of the kidney, as shown in Rose Bradford's experiments. Casper (*Centralbl. f. innere Med.*, 1896, xvii. 471) notes that there is sometimes an entire absence of pyrexia throughout the disease, and quotes four such cases. Generally in later stages, and with septic kidneys, marked hectic with irregular chills occur, with emaciation and weakness. Tube casts are usually absent; albumin derived from the blood and pus cells is found when actual erosions have taken place into the urinary tract, but it is not in excess of that due to the pus or hæmoglobin present. Occasionally it is found with casts, but without blood, at an early stage from a secondary nephritis, but generally the remaining tubules do their work perfectly, and Lacomb records a death from double renal tuberculosis where no albumin had been present. Stress has been laid on the increased frequency of micturition by night as well as by day (Brown), but it is curious that nocturnal incontinence in children never seems to be due to this disease. Of late years the cystoscope has proved of the highest value in diagnosis, showing lesions in the bladder and about the mouths of the ureters, and enabling us to draw off the urine from one kidney separately. This latter aim can be attained also by a simpler instrument devised by Harris (*Journ. Amer. Med. Assoc.*, 1898, xxx. 236). As to the hemorrhage, it appears sometimes at an early stage from congestion (D. Newman, *Lancet*, 1898, ii. 14), and later on from the erosions, and varies widely in amount. Unlike that caused by calculus, it is not increased by moving about. Sometimes by clots and sometimes from the *débris* of kidney tissue a ureter is blocked up, and thus we may find more or less complete retention alternating with profuse urination. This in turn may lead to hydronephrosis, but in other cases a tumour may be due to a collection of pus around the kidney, and often moderate enlargement of the organ takes place without suppuration.

With regard to treatment, pain is best relieved by codeia, according to Bryson, who adds that cures are more often produced by antitubercular remedies than is generally believed.

Among them he mentions sandal wood oil, cubebs, cod-liver oil, creasote, and especially change of climate. T. Brown has met with instances of surprising improvement even in advanced cases from rest, good food, change of climate, and large doses of creasote, and he claims that many early cases can be cured. Though, theoretically, it is desirable to get rid of a focus of disease in one kidney, yet the shock of operation may cause lesions elsewhere to spring into activity, and this point seems worthy to be taken into account. Savariaud (*Gas. d. Hôp.*, 1898, lxxi. 821) sums up the cases for operation as those where the patient is sinking from his sufferings or absorption of toxins, those where the kidney is practically destroyed by suppuration or where retention of urine or a peri-renal abscess exists, and finally some rare instances where hemorrhage or pain is so great that life is endangered. General miliary tuberculosis or advanced lung disease are a bar to operation, and all writers are agreed on the importance of avoiding catheterisation or washing out the bladder, which is sure to aggravate the trouble even when antiseptic precautions are taken. The bladder irritation is often not due to infection, but merely to the passage of *débris* from the kidney. Israel (*Deut. med. Woch.*, 1898) considers that the condition of the second kidney is of more importance than that of the bladder with respect to operation, and if not tuberculous it may show amyloid changes or chronic nephritis. In such cases the diagnosis is most difficult.

The mortality under surgical treatment has been urged against it. Thus Facklam's statistics recorded a death-rate after nephrotomy of 60 per cent., and of 28 per cent. after nephrectomy. To discuss this subject would, however, be out of place here, but I may mention that Bolton Bangs (*Ann. Surg.*, 1898, xxvii. 14), after analysing 135 recent cases, speaks strongly in favour of surgical intervention. He claims that the immediate results are brilliant in relieving pain and prolonging life, and that the remote results are better than those of medical treatment. His figures show a death-rate of 20 per cent., or 29·6 per cent. if we include the nine months after operation. However, the fact is that no statistics of other methods exist and few of the many recoveries are reported. It would seem probable that with better diagnosis and improved hygienic methods a vastly greater success might be obtained without surgical aid.

Both in medical cases and when the fitness of a patient to undergo an operation has to be decided upon, the question often arises whether the kidneys are acting normally and excrete effete matters in due quantity. The symptoms of kidney disease are not always trustworthy, and a test has been devised which may have a certain value. This is the injection of methylene blue, which in health colours the water in half-an-hour, and shows increasing effects for three or four hours (*Bull. d. Hôp. de Par.*, 1897). In kidney disease, except in acute epithelial nephritis, a delay in the occurrence of the tint is constantly found. Failure of a functional character is also met with where no lesions after death are demonstrable, and conversely, if the lesion is small and much healthy tissue remains, permeability may be normal. To carry out the test 1 c.c. of a one in twenty solution of pure methylene blue (not methyl blue) is injected into the gluteal muscles, and the bladder is emptied at the same time and again in half-an-hour, and then every hour afterwards. A colourless derivative is sometimes passed before or together with the blue. If urine containing this chromogen is heated with acetic acid a green tint appears. Achard and Castaigne believe that if both the chromogen and the blue are absent in the first specimens permeability is very feeble, but if the blue alone is delayed there is only a functional failure. The test seems to be quite harmless, and may throw light on the condition of many patients whose symptoms are obscure. Herter thinks, however, that in advanced renal disease the injection is not without danger, and finds that in most individuals the colouration ceases in thirty-six hours. He adds that the disappearance of the dye in that time shows probably that the kidneys are normally clearing the blood of urea, salts, and other matters, although the urine may show albumin and casts. —*Bristol Medico-Chirurgical Journal, September*, 1899.

# Surgery.

## GENERAL SURGERY AND THERAPEUTICS.

### 72.—FEVER IN ASEPTIC SURGERY.

By B. Farquhar Curtis, M.D.,
New York; Professor of Clinical Surgery, &c.

[The following is taken from Dr. Curtis's paper :]

We cannot claim that all cases of "traumatic fever" are caused by slight infection, for proof to the contrary has been too abundantly furnished from the time of the studies of Volkmann and Genzmer down to our own. Fever too often accompanies simple fractures and other subcutaneous injuries with extravasation of blood, in which infection is impossible unless it take place through the medium of bacteria circulating in the blood. According to the experiments of Köhler, Angerer, Edelberg, and others it seemed probable that the pyrexia was caused by fibrine-ferment set free in the extravasated blood and absorbed by the surrounding tissues. These results have been questioned recently by Schnitzler, Ewald, and others. Whether aseptic fever is caused by fibrine-ferment or by nuclein, as it has been stated, may not be of much importance to the practising surgeon, as both may be the result of blood-clot and breaking-down tissue in aseptic wounds, and the fact remains that the absorption of these substances is capable of causing a rise of temperature. But these studies may yet lead to important consequences if they will furnish us with a clinical test capable of informing us immediately after an operation whether the fever in a certain case is due to this absorption or to a beginning infection. The early dressing of serious wounds is a frequent cause of infection, and we are, therefore, accustomed to postpone it for several days at least, and to rely upon the thermometer, together with certain symptoms to indicate the presence of infection and the necessity for an early dressing. It is of the greatest importance for us to be able to interpret correctly any rise of temperature which may occur and not to be compelled to expose a wound unnecessarily if the fever is due to some other cause than infection. This is especially true since surgeons have endeavoured to abolish drainage of aseptic wounds as far as possible, for if there is an unusual amount of secretion or a slight infection the whole course of the wound may depend upon relieving the tension by opening the wound and establishing secondary drainage, and if we should accept the hypothesis of aseptic fever to account for a rise of temperature in such a case, and allow the wound to remain untouched, we should run far greater risk than that incurred by a premature dressing.

As practical surgeons the point which interests us is the recognition of infection and beginning inflammation of wounds at the earliest possible moment, and there can be no question of the value of the thermometer in indicating this condition. But to properly estimate the presence of fever we must exclude all other causes for it, as well as the absorption of pyogenic substances from the wound. The ordinary disturbances and diseases which cause fever should first be excluded, and this is sometimes a task of the greatest difficulty. We have seen malarial fever, gastro-intestinal disturbances with absorption of ptomains, constipation, bronchitis (often from the ether), rheumatism, typhoid fever, and in children the various infective fevers, cause the greatest number of errors in this regard. Some good authorities lay great weight upon leucocytosis as a sign of pyogenic infection, but there are so many other conditions in which it occurs that the greatest precaution should be taken before an increase in the white cells is accepted as evidence of wound infection.

Many varieties of absorption fever could be quoted. Absorption of urine when a distended kidney bursts during nephrectomy, absorption of the bile after operations on the biliary passages when the wound is left open and packed, absorption of thyroid juice after thyroidectomy, all cause a rise in temperature. We have seen two cases of a fatal result after partial thyroidectomy for exophthalmic goitre, caused by acute thyroid poisoning from absorption of the juice of the gland, accompanied by very high temperature, in one case reaching 109° F. before death, with absolute asepsis of the wounds. Fever is often seen after operations for tubercular peritonitis and arthritis, caused by the absorption of the tuberculin toxin. The peculiarity of all these absorption fevers, including aseptic fever with them, is their prompt beginning immediately after operation, whereas inflammatory fever requires twenty-four hours or more before it begins. A virulent infection, such as occurs in a poisoned wound (such as a surgeon might obtain in operating upon a septic subject) might cause an almost immediate rise of temperature, but we are discussing operation wounds in which great pains are taken to avoid infection, and in them the infection will be slight and slow in development. But it is not altogether safe to assume that the slight infection seen in operating wounds may not cause some of the pyrexia generally known as aseptic fever merely because the latter begins so promptly. The chill and sharp rise of temperature seen after urethral instrumentation is so sudden that it seems impossible to explain how it can be caused by infection, and yet it can be almost entirely prevented by proper cleansing of the urethra and sterilization of the instruments and surgeon's hands. There may be a nervous element in it, but the main cause must be infection, otherwise aseptic precautions would not so greatly influence its occurrence. All the cases in which a sudden rise of temperature follows operation, however, cannot be charged to absorption, and a certain proportion of them seem to us to be caused by shock.

In making the diagnosis of aseptic fever we can distinguish it from shock by the good quality of the pulse, and we can readily exclude the other varieties of absorption fever (toxins, bile, thyroid juice), by the history of the case. We can distinguish it from inflammatory fever by its very early appearance, by the fact that the pulse remains relatively low, and the patient has few subjective sensations. He may be a little flushed and thirsty, but does not show so much depression or nervous excitement as is seen in inflammation. The character of the pulse is important as well as its rate, for in aseptic cases it remains quite soft, and has not the quick beat and wiry tension so common in inflammation. The pulse will probably be the best guide in doubtful cases. The fall of aseptic fever is not so characteristic as its rise, for it may come down in two or three days, or it may continue for as many weeks a little above normal. We must bear in mind, however, that there are many mixed cases.—*Medical News, June* 24, 1899.

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## 73.—ASEPSIS OF HANDS OF THE SURGEON AND SKIN OF THE PATIENT.

By Carl Beck, M.D., New York City.

(1) Ideal asepsis has become an established fact as far as all objects are concerned which stand boiling well. (2) The atmosphere has no pernicious effects on wounds, as pathogenic bacteria fortunately have a tendency to settle, so they can only come into contact with a wound when the dust in the room is immoderately stirred up. To avoid this possibility, the air in the operating-room is saturated with moisture, at least during two hours before the operation. This can be done simply by originating steam in a kettle. (3) Asepsis of the hands of the

surgeon as well as of the skin of the patient is still imperfect, total destruction of the bacteria of the skin being practically impossible. (4) Asepsis must be attained principally by physical, especially mechanical, methods. Chemical processes should play but a very subordinate part. (5) The means with which asepsis should be attained must be aseptic. This refers particularly to the water used for washing, and the soap, which must have been prepared by the boiling process. If brushes are used special care has to be taken. They can only with difficulty be rendered aseptic, thorough cleaning impairing their usefulness. (6) The surface of the human body is impregnated with many different bacterial species. Some of them adhere to the skin surface, others are imbedded in the dried cells of the epidermis. They do not need destruction, but removal. This can be done by simple mechanical means, viz., scrubbing with soap and hot water. Two kinds of soap are used for this purpose. First with linen compresses, dipped into fluid soap, which is mixed with soft sand (Stuttgart sand), the skin is energetically scrubbed for two minutes, a stream of very warm water always flowing over the surface. Then asepticised green soap is used in the same manner, for the same length of time. Particular attention is given to the folds and creases of the skin and to the subungual space. The latter requires the use of a nail-cleaner and energetic wiping with the sand-soap. Now the skin is dried with an aseptic towel and rubbed with a gauze compress, saturated with 50 per cent. alcohol for about one minute. The alcohol is used for the purpose of dissolving the fat of the skin, which shelters the bacteria; and by dissolving the shelter, the bacteria are removed at the same time. Whether washing with bichloride of mercury is needed after these procedures is open to discussion; it will certainly not do any harm.

There is no doubt that the surface of the skin can thus be rendered absolutely aseptic by this method, as well as by a few other similar ones. But there remains still a number of bacteria imbedded in the glands of the skin—the secretions of which offer a favourable soil for their development—which cannot be removed. But they will do as little harm as the dust in the room, if cared for properly, viz.: In the incising of the skin a number of glands are naturally dissected, and the bacteria contained by them are freely exposed. The dissecting-knife also comes in intimate contact with them and must therefore be considered infected. This undeniable fact explains thoroughly the so-called suppuration of the stitch-canals, as well as the bad reputation of the catgut, and many cases of infection under the supervision of the "extremely careful aseptic surgeon." It also explains suppuration after most laboratory tests, carried out under "the most minute aseptic precautions."

How do we get around this salient point? The knife used for the skin-incision must not be used for further incisions. The wound-margins of the skin are covered with sterile napkins, which are fastened to the wound surface with small miniature forceps, so that the skin-wound is not touched at all during the subsequent manipulations. Surgeon and assistants wear sterilised linen gloves. The surgeon changes gloves after the skin incision is completed. For uniting the wound-margins of the skin the subcutaneous method should be preferred. The superficial surface of the skin of the patient had been rendered aseptic beforehand by having been given a warm bath twenty-four hours before the operation, a rigid scrubbing with soap and shaving having taken place at the same time. A poultice of green soap had been applied to the skin-surface for twenty-four hours in order to secure thorough permeation of the epidermis, which is macerated to some extent by this procedure. The surface being aseptic, and the skin-glands, which contain bacteria, being *hors de combat*, it becomes evident that the only possible source of infection remaining then, would be the surgeon's hands. As explained before, the bacteria on the skin-surface can be removed, consequently also those of the surgeon's hands. But the bacteria in the skin-glands can not. But as the surgeon's skin is not incised, the bacteria sheltered by his glands are not exposed, provided there are no forcible efforts made to dislodge them. These facts teach us: The advisability of wearing aseptic gloves. In case gloves interfere with the technic of a delicate operation, the hands should come in contact with the wounded area as little as possible, most manipulations should be done by instruments, for instance a needle-holder should be used while sewing, instead of taking the needle into the hand—thumb forceps should be used for holding tissues instead of holding them with the fingers. The advisability of operating as quickly as possible. The necessity of avoiding forcible manipulations, especially blunt operating, which is so much favoured by some surgeons under the pretence of blood saving. (7) The head should be covered with a cap, as, in bending over the field of operation, it often happens that the heads of the surgeon and his assistant come in contact. (8) Long beards are unsurgical. (9) The air expired by the healthy contains no bacteria deleterious to wounds. If the surgeon should suffer from rhinitis, tonsillitis, &c., he should best omit operating, or at least use proper local precautions. (11) Bacteriologic tests of aseptic methods, gained on artificial soil, cannot be transferred upon biologic processes, the living cell reacting against bacteria differently from gelatin, agar or serum.—*Journal American Medical Association, August* 19, 1899.

## 74.—TREATMENT OF COMPOUND FRACTURES.

By William G. Le Boutillier, M.D.,
Of New York,
Surgeon to the J. Hood Wright Memorial Hospital.

[From Dr. Le Boutillier's paper.]

The gravity to life of compound fractures, and the mortality from them can hardly be inferred from text-books. An erroneous impression is derived from statistics of compound fractures that include osteotomies, and simple fractures made open, where there is an opportunity to protect the wound from infection. When this is done, the resulting percentages are very much more favourable than any likely to be met with in practice, where no such precautions are possible, and the wound is often full of earth, stones, and other foreign bodies. In any considerable group of cases of compound fractures we may expect to find (1) those that die of shock ; (2) those that require primary amputation ; (3) those that die of intercurrent or complicating disease or other injuries, the compound fracture itself remaining aseptic ; (4) those that pursue an aseptic course and recover ; (5) those in which our efforts to procure asepsis are unsuccessful and the wound becomes infected. Of the cases becoming infected, there is the set of very mild infections (or of late superficial infection of the wound) with speedy restoration of asepsis under proper measures. A second set of infections of moderate or great intensity, where recovery gradually occurs ; and a third set where amputation or death occur. Of the available fifty cases, four of the tibia and fibula were submitted to primary amputation of the thigh, the extent of injury precluding any attempt to save the injured member. Of these cases of primary amputation, two in my service, healed by first intention ; in one, in the service of a colleague, there was some infection delaying healing ; in the fourth, in my service, there was death in less than twelve hours. Three other cases died in less than twenty-four hours. Of the total of fifty cases, nine died. The death in four cases may be attributed to shock or other injuries, and not to avoidable infection. Three deaths are not attributable to the infection of the wound.

Deducting the four cases of primary amputation, three of death in shock, and three of death due to other causes, there remain forty cases from which to compute the percentage of success in the efforts to make the wound in compound fractures pursue an aseptic course. Of these forty cases, twenty-three pursued an aseptic course ; seventeen became infected. The infection was mild in six cases ; moderate or severe in seventeen. In six a secondary or late amputation was done, with one death. One case died of sepsis and exhaustion without amputation. The cases of compound fracture are usually brought to the hospital by the ambulance. The ambulance surgeon, at the scene of the accident, does not, as a rule, attempt to cleanse the wound nor the limb, and he does not reduce any displacement of the bones. He places a large pad wet with carbolic acid solution over the wound and applies proper splints. As soon as practicable after admission to the hospital the patient's wound is attended to in the accident ward or operating-room. If there is much shock delaying the first thorough dressing, a preliminary cleansing of the limb is made to prevent excessive infection while waiting, and a sterile dressing is applied. The first dressing is done at times without an anæsthetic, but in rather more than half the cases anæsthesia was employed. Of the last twelve cases, admitted during the last nine months of last year, only one was cleaned and dressed primarily without anæsthesia, and yet only five of these cases recovered without some infection. But all were severe cases, and the wound excessively dirty in a number of them. The employment of anæsthesia for the first dressing seems to me very important. The possibility of thoroughly scrubbing, curetting, cutting, and manipulating without producing pain, and the greater ease of so doing due to the relaxation of the muscles, leads to much more careful work. The danger is that one will be tempted to do more suturing of muscles, bone, or integument than is wise. The cases that survive shock and do not require immediate amputation divide themselves into several groups as regards the treatment needed. There are, first, a set of cases where anæsthesia is often unnecessary, or where it may be employed, if desired, and where a sufficiently good wound-treatment is obtained by a thorough disinfection of the skin and edges of the wound. No incisions, no wound irrigation, no sutures, no drainage are required. The fracture may be due to direct or indirect violence, but the wound is fairly small, clean, and the injuries to soft parts very trifling. A sterile gauze dressing and such retentive apparatus as one would employ for a simple fracture are enough. My preference is for a light plaster case.

There is a more serious group of cases where it is necessary to enlarge the wound, to irrigate or to drain. Theoretically one would like to remove all the tissues so bruised as to have their vitality destroyed or much impaired, to wash out, or inhibit the vitality of, all micro-organisms, to suture severed muscles, to retain bones in apposition by suturing, and in general to leave the wound in a condition approaching that of a wound of similar character deliberately made on the operating-table. In a great many cases, if the damaged and probably infected tissues are removed with scissors and forceps, and the wound thus made aseptic, one will find that there is so much damage done to the limb that there is nothing left to save, and an amputation must be done. To limit one's zeal for asepsis within bounds that may save a serviceable limb, and endeavour to assist nature in combating the expected infection, is a wiser and more conservative plan than to try to leave the wound in a theoretically perfect condition. Just how far to go and when to stop in our operative treatment of these cases requires experienced judgment to lead to thoroughly satisfactory results. No one thing, however, seems to be more unwise than primary suturing of bone or muscle. Where the injury is so severe as to tear muscles, the probability of successful suturing is small. When the damage to surrounding parts is small, and suturing likely to lead to good results, it is seldom necessary. There is less risk of infection in converting a simple into a compound fracture, when we can keep pyogenic bacteria out of the wound, than in suturing muscles and bone in a wound, already, perhaps, so contaminated with bacteria that under the best conditions for resisting inflammation, good circulation, absence of tension, and adequate drainage, infection is more than likely to follow. An exception should be made for cases where the injury is produced by a clean-cutting instrument. In some cases, no sutures were used, and in others the wound was incised under an anæsthetic. All were carefully irrigated through the original wound, and drainage was employed in four. In three of these there was no infection, in the fourth a very late infection with the bacillus pyocyaneus, not interfering with the healing of the wound.

To sum up the cases. Of ten treated without ether, irrigation, drainage, or suture, there was no infection in eight. Of six where bone or muscle was sutured, in three there was no infection; one dying of nephritis. Of nine of suture of the wound, there was no infection in five, and in the final set of sixteen not sutured, there was no infection in nine. Infection occurred in eight cases where incisions were made; in nine where none were made. Of the aseptic cases recovering, eleven wounds were enlarged and twelve not; eight of these were in the first set of cases. Infection occurred seventeen times, was mild in six cases, severe or moderate with recovery in four, led to six amputations with one death, and one death without amputation. I have not computed the time necessary for union to take place in these compound fractures, and have paid no attention to resulting deformity. Delayed union is well known to be more frequent in compound than in simple fractures. Where much bone has been removed the resulting separation of the fragments probably has some influence as well as the damage to the periosteum by the original injury or the infection. I have omitted any reference in most of the cases to the often multiple injuries. Their influence on the course of the compound fracture is very indirect, resulting through lowered vitality of the organism. A word in regard to necrosis. This was noted in five cases, two infected and three that are classed as aseptic.

In conclusion, I would express the opinion that the treatment most likely to give the best results is the one in which operative interference is the smallest possible. Free incisions, immediate excision of tissues badly damaged, whether by violence or by soiling, drainage of pockets without packing of the wound, the removal of as little as possible of fragmented bone, and suture of bone or muscle in clean wounds only and with the amplest drainage, may in appropriate cases supplement the most thorough and painstaking mechanical cleansing of the wound. I have not seen medicated solutions or dressings at this time followed by any better results than the use of sterile gauze. For irrigating, I believe a physiological salt solution to be as efficient as any other, and less liable to do further harm to bruised and partly devitalised tissue. What bacteria remain in the wound after thorough mechanical cleansing cannot be reached by antiseptic solutions or dressings, for they are probably embedded in tissues and inaccessible to germicides, without damaging viable tissue. The limb should be put in proper apparatus ; that one being the best to use in the particular case, with which the operator is most familiar in simple fractures. During the next few hours and days careful watch for the occurrence of symptoms of inflammation should be kept up, and at their advent there should be no delay in inspecting the wound and taking what further measures the individual case may require. Where free incisions are made, at the primary dressing, the circulation of the wound is less embarrassed by the swelling so apt to occur as a result of traumatism, and the tissues are better able to protect themselves from the harmful influences of the bacterial multiplication, as they are better nourished. Absorption of toxic products is also less likely to occur, and give rise to severe constitutional symptoms. So many cases coming to the J. Hood Wright Memorial Hospital are infected with malarial organisms that the temperature alone has not been found to be a reliable guide to the occurrence of infection in the wound. I should rather lay stress on an abnormal amount of local pain and rather free serious discharge from the wound as the earliest reliable symptoms of infection in these cases. The temperature in aseptic cases is often one or two degrees above normal during the first twenty-four or forty-eight hours, and a similar rise of less extent is quite common even in simple fractures.—*Annals of Surgery*, *September*, 1899.

## 75.—COMPLICATIONS AND TREATMENT OF FRACTURE OF THE BASE OF THE SKULL.

By J. M. Elder, B.A., M.D., C.M.,
Surgeon to the Montreal General Hospital; &c.

[The author first gives the details of seven cases, and then proceeds :]

In all these cases the following general plan of treatment was followed out as systematically as circumstances would allow :—(1) Rest in bed. (2) Quiet was enjoined, and preferably the patient should be kept in a dark room. In the private cases, only, could this be done. (3) An ice bag was kept to the head. (4) The affected ears were thoroughly syringed out with carbolic acid solution 1-60, and packed with iodoform gauze, over which was bandaged a pad of sterilised cotton wool. This was repeated as often as the cotton wool showed any moisture. The nose was sprayed every four hours with the following, taken from the Montreal General Hospital Pharmacopœia: ℞ Sod. biborat., sod. bicarb. aa. grs. iii, acid carbolic gr. i, glycerine ʒi, aq. ad. ℥i. Sig. Use in the atomizer. In addition, the nostrils were plugged with sterilised absorbent cotton changed frequently. Where a mouth wash and gargle could be used and was indicated by involvement of the vault of the pharynx in the fracture, the following was used every two hours :—℞ Pot chlor. gr. xlv., acid hydrochlr. m. xx, glycerine ʒiv, aq destillat ad ℥x. Sig. As a gargle and mouth-wash. The diet was strictly fluid, and in many cases of unconsciousness, food was given per rectum for several days—peptonised beef juice and egg, with a little brandy, yielding very good results, given in this way every four hours. It is, I think, highly important to carefully nourish these cases of fracture by suitable diet. But the question may naturally arise, can one always be sure that one has a fracture of the base to deal with? I cannot answer this better than by quoting a recent utterance of a London surgeon on this subject : "The signs of a fractured base are exceedingly equivocal, and it is often only by a consideration of the whole picture that a certain diagnosis can be made." (Rose & Corless Surgery, 1898, p. 464).

If one has, following severe injury to the head, (1) evidences of severe brain injury : (2) bleeding from the cranial orifices which communicate with one or more fossæ of the skull ; and (3) if the presence of cerebro-spinal fluid can be demonstrated in the discharge from any of these orifices, it seems to be fair to conclude that one is dealing with a fractured base. More especially is this true if one finds, at the same time, a fracture of the parietal or temporal bones, as so often happens. These fractures of the vault, I am convinced, often extend to the base, but being linear and not compound, they require no treatment and so escape notice.

What are the dangerous complications of fractures of the base of the skull? (1) *Hemorrhage.*—The fracture may easily tear the dura mater and open some of the large venous sinuses, with fatal effect. This accounts for the great fatality following fractures of the posterior fossa of the skull (the drainage basin), as compared with either the middle or anterior fossa. Hemorrhage, too, may also result from the fracture involving some of the arteries entering the base of the skull. The treatment must be directed to the control of this by any and every means possible. (2) *Sepsis.*—The fracture may become compound, opening into some of the cranial canals which communicate with the outer air; for example, the external auditory meatus, the Eustachian tube, the nose and nasopharynx. Most fractures involving the middle and anterior fossæ of the skull communicate with some one or other of these cavities, and so are just as truly compound as the end of the tibia sticking through the skin, and here it is that modern antiseptic surgery should, and I claim does, give us good results when faithfully and intelligently applied. If the cracked skull is kept aseptic by proper treatment of the road leading to the site of fracture, it will heal as kindly and with as little constitutional disturbance as any other bone treated in the same way.

Hemorrhage from the ears, nose, and mouth must be stopped, and to do this a careful search should always be made for its source. I should certainly have lost the first of the above series of cases had I not taken this precaution, for there was very little external bleeding in her case, and yet she was really bleeding to death into the gullet. Having controlled the hemorrhage as far as possible, our energies should next be turned to rendering the site of the fracture as aseptic as possible and adopting means to keep it so. Cleanse the cavity affected, and keep it clean by frequent washings and, where possible, by closing with some antiseptic absorbent dressings. Then the germs in the air will not be able to gain access to the fracture, and thence into the cerebro-spinal fluid or the venous sinus, causing subsequent septic meningitis which will nearly always be fatal. Especially should one cleanse the external ear and keep it dressed antiseptically. This should be done on the affected side, even when no blood is issuing when you first see the case. The blood may be accumulating in the middle ear and escaping through the Eustachian tube and may later rupture the drum membrane and escape through the external meatus. Spray or douche the nose and naso-pharynx carefully, and then close the nostrils with cotton wool. Remember that the upper chambers of the nose communicating with the ethmoidal and frontal sinuses, are, fortunately, generally fairly sterile. And finally, use an antiseptic mouth-wash as frequently as possible. Control vomiting if at all possible. It is bad in many ways. It increases intra-cranial blood pressure, and thus encourages hemorrhage ; and it is very apt to drive septic material into the posterior nares and the Eustachian tubes. Give nothing but liquid diet ; feed entirely by rectum for a few days, if necessary, and do not be afraid to give opium hypodermically or by rectum if the patient is violent and restless, as they generally are in cases of brain injuries. I know there is a general prejudice against the use of opiates in these cases, but I have seen nothing but good follow the use of opiates where indicated, and think the patient quieted by opium has a much better chance of recovery than the patient who is wildly delirious ; and, above all, keep the patient from all excitement, whether of sight, sounds, or mental agitation. There is nothing in what I have said that may not be carried out by any medical man living in this country, and cases in private practice should get on even better than those in a large emergency hospital ward with its noise, bustle and light.—*Montreal Medical Journal, October*, 1899.

## 76.—THE REDUCTION OF SHOULDER DISLOCATIONS.

By W. Thelwall Thomas, F.R.C.S.,
Hon. Assistant Surgeon, Royal Infirmary, Liverpool, &c.

[After speaking of the demerits of the foot in the axilla method, Mr. Thomas describes the following mode of reducing these dislocations :]

The following method of manipulation has answered very well in all the cases that have come under my observation for the past seven years, and has the advantage of being suitable to the sub-coracoid, sub-glenoid, and sub-clavicular varieties of dislocation, and slight modification of it would, I feel sure, serve to reduce a sub-spinous dislocation. It may be described as a combination of the "Kocher" and the "traction outward" methods. The patient being seated on a firm stool or chair, an assistant stoops down on the left side, if the right shoulder is dislocated, and with his left arm crossing the front of the patient's chest, places the hand firmly on the end of the right clavicle and acromion ; his right arm is passed behind the patient's back and grasps with hooked fingers the axillary border of the scapula. The function of the assistant is to fix the scapula before any manipulation is commenced, and prevent the manipulator dragging the patient off the chair ; occasionally a second assistant becomes necessary to hold assistant number one, if the muscles of the patient are powerful, and traction by the surgeon has to be kept on long. The surgeon, keeping the elbow at a right angle, grasps the wrist of the dislocated arm with his right hand, and the lower end of the humerus from behind with his left hand, locks this hand against the fore-arm of the patient to prevent slipping. He now quietly and slowly abducts the humerus to the right angle. Traction outward is commenced as soon as the humerus is half way up, and is steadily and quietly, but firmly, continued, at the same time gently rotating the humerus outwards ; in other words, drawing the arm out of the side, and taking the hand and fore-arm up in the air, keeping the elbow at a right angle all the time. If the head of the humerus does not travel from beneath the coracoid (in the case of sub-coracoid dislocation), the surgeon places his own feet nearer the patient, and while steadily pulling, falls away from the patient, thus bringing his own weight to assist traction ; and in some obstinate cases, slowly rocking the humerus up and down, or from side to side, to tire the powerful muscles which are resisting, chiefly, of course, the deltoid and pectoralis major. In most ordinary cases the head of the bone is observed to be now in the glenoid cavity, and on account of the steady continuous traction, the head goes in without snap or jerk. If the head is not reduced by this time, rotation outwards is continued until locking occurs. Rotation inwards now immediately puts the humerus right ; traction is at once stopped, and the surgeon slings the reduced arm to the patient's side, keeping the hand high. If this method is applied very slowly and thoroughly, so little pain is caused that chloroform is rarely required to relax the resisting muscles. I generally keep up a running conversation with the patient during the manipulation ; this serves to distract his attention from the shoulder, and cause involuntary relaxation of the muscles in the neighbourhood. Chloroform is occasionally required, not on account of the size of the muscles of the patient, but only in highly-strung, nervous men or women, who will not bear even slight discomfort, still less actual pain. If an anæsthetic has been administered, the scapula is fixed in the same manner, the patient of course now lying down ; the same traction and manipulation is gone through, but very little of each is then required.

*Resumé* :—Fix scapula ; abduct arm, elbow being at a right angle, and apply traction ; rotate humerus outward, add weight to traction if reduction obstinate, and rock humerus, to still further tire the muscles if the patient is powerful, and rotate outwards until locking occurs. Rotate inwards. Sling hand to opposite shoulder. During the last four years it has only been necessary to administer chloroform once in a recent dislocation ; and the more familiar one becomes with the above method, the less frequent will an anæsthetic be found necessary. —*The Liverpool Medico-Chirurgical Journal*, *July*, 1899.

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## 77.—GUNSHOT WOUNDS OF THE CHEST IN THE SPANISH-AMERICAN WAR.

By HENRY S. GREENLEAF,
First Lieutenant and Assistant Surgeon, U.S. Army.

Noting that several cases that looked most encouraging shortly after being wounded, later developed serious complications, I began to collect the histories of as many cases as I could find recorded by the different surgeons who had attended them. I have been able to collect the records of twenty-four cases as they were sent in separately to the surgeon-general's office by these surgeons, and of these cases, fifteen recovered without complications ; three had hæmothorax, without going on to formation of empyema ; and six developed hæmothorax, which eventually became purulent and required operation. One out of this latter number had peritonitis, and died. [The details of cases are omitted here. Nearly all the wounds were due to the Mauser bullet.]

From the cases presented we are at once impressed with the fact that while the effect of the modern gunshot injuries to the chest is humane, we have a sufficient percentage of unfavourable results to greatly modify this claim. Out of twenty-four cases we have nine, or nearly 37 per cent., in which hæmothorax or empyema developed. There may be many more patients who promptly recovered, and certainly only a very few, if any, who had complications, but those who did, give us much important information. We can clearly infer that if they could have been treated under other conditions, as in time of peace, their results might have been less formidable. This is obviously impracticable in time of war, but offers valuable suggestions for the management of these cases at such time. In the Santiago campaign the wounded had to be carried in ambulances, over roads that baffle description, in order to reach the hospitals at Siboney, and this was done some eight or ten days after the wounds were received. Moreover, while in the division hospitals on the San Juan River, they were but poorly sheltered, and were subjected to very severe weather, two conditions which would favour continued bleeding on the one hand and infection on the other. Illustrations of this we have in the first nine cases—the development of hæmothorax, which in most instances was not discovered until twelve or fourteen days after the wounds were received, and it was more than likely that prior to this time it did not exist to any marked degree, but formed gradually because of the inability to maintain perfect quiet and rest in the treatment. In three of these the blood in the pleura was absorbed without becoming infected, and in all the others excepting two the breaking down of the thorax to form pus was a late complication. Thoracentesis showed blood only as late as the twentieth day in one case, nineteenth day in another; while in a further instance blood only when the patient arrived at the hospital at Forte Monroe. In each of these cases, however, operation was ultimately necessary for empyema. In all except one case the external wounds of entrance and exit healed promptly, and the patient had no symptoms which would indicate infection at the time of injury. This one case might have been no exception had not the injured man been compelled to lie on the ground, exposed to wet and cold, shortly after being wounded. From these facts it seems evident that in the majority of these cases the cause of infection of this collection of blood in the pleura was not the bullet directly; the micro-organisms must have gained access to this most fertile soil from the wounded lung. In one instance, indeed, we find that the development of empyema after the nineteenth day was on the side opposite to the wound of entrance. These facts point clearly to most important suggestions in the treatment of all chest injuries in time of war. They are always to be looked upon as most dangerous wounds, especially in the eyes of the soldier himself, so that they will be handled with especial care from the time of injury. And the utmost care must be persevered with in their treatment for several weeks, until all danger of further hemorrhage into the pleura is past.

The indications for treatment are twofold: First, to guard against infection at this time, when conditions are so favourable for that serious complication, and second, to check hemorrhage as soon as possible; for a collection of blood in the pleura or a hæmatocele in the lung is a most fertile ground for saprophytic invasion, and acts itself as a foreign irritant. The first is met by promptly cleansing and applying the first-aid sterile dressing, and using special precautions during convalescence to prevent exposure and infection that would lead to any general inflammatory condition of the lungs. We know that a bronchitis, pneumonia, or any inflammatory condition of the lungs presents a favourable soil for the ever-present micro-organisms and soon breeds them into their more virulent form, thus greatly favouring the eventual formation of empyema or lung abscess, especially where there has been bleeding. The second indication is met by making it thoroughly understood, especially among the soldiers themselves, that all chest wounds are serious, and that the patient must be kept absolutely quiet and passive, avoiding talking and active motions of all kinds, and transferred with the gentlest care, preferably on a litter, over rough ground. The surgeon should employ the usual methods of controlling internal hemorrhages, as keeping the injured side at rest by strapping and the use of opium, the administration of internal astringents, local use of cold, enforced use of bedpan, &c. Undoubtedly, we have in chest injuries a condition which calls for the utmost care and painstaking, in order to prevent a fatal or a most serious and deforming result.—*New York Medical Journal, August* 26, 1899.

## 78.—THE TREATMENT OF WOUNDS OF LARGE ARTERIES.

By Walter Whitehead, F.R.C.S., F.R.S.E.,
Senior Surgeon to the Manchester Royal Infirmary.

[Mr. Whitehead first relates a case of double traumatic aneurysm of the brachial artery, and then makes the following remarks :]

An elastic tourniquet having been applied to the arm just below the axilla, an incision was made over the swelling in the course of the brachial artery. During the subsequent stages of the operation the length of the incision was increased to about five inches. After dividing the deep fascia an aneurysmal sac, rather larger than a walnut, was exposed. Over its surface the median nerve coursed downwards, the nerve-fibres being spread out into a broad flat band. After the nerve had been liberated and drawn to one side, the sac was found to communicate by a small round aperture, a quarter of an inch in diameter, with the anterior surface of the brachial artery. Behind the artery, and communicating with it by another aperture, was a second and much larger sac, which was embedded to a great extent in the substance of the triceps muscle. The second sac was about two inches in length and one inch in diameter.

There can be no doubt that primary ligature of the brachial artery on each side of the place where it was injured would have been the best treatment in this case. With regard to the treatment of wounded vessels generally, possibly there may be some slight difference of opinion as to the course to be followed in cases where the vessel is completely divided, and in cases where the division is incomplete. If an artery be completely divided it is probable that nature will in time close the ends of the vessel securely by means of fibrous tissue, provided that hemorrhage be checked and that sepsis be avoided. Even in such cases, however, if the vessel be of any large size, the interests of the patient will be best consulted and he will be saved much unnecessary risk, if the two ends of the vessel be ligatured. Sepsis in such a wound, and it may be that septic material has been carried in at the time of the injury, will almost inevitably lead to secondary hemorrhage and not improbable to danger both to life and limb. When a large artery is wounded, but not completely divided, there can be no doubt that the only safe plan of treatment is primary ligature. The wound should be enlarged if necessary, and the vessel should be secured on each side of the place where it is injured. The rule which was given in surgical text-books until quite recently, viz., that no attempt should be made to secure a wounded vessel in cases of primary hemorrhage, *unless the vessel was actually bleeding*, must be somewhat modified at the present day. If there is a probability, or even a possibility, that a large artery is injured, there can be no doubt that the surgeon ought to explore the wound, whether the bleeding has ceased or not. In cases of incomplete division of an artery, if the stoppage of the bleeding for a time give rise to a false sense of safety and if, consequently, the vessel be not secured, one of two events will almost certainly follow. Either the clot which has closed the opening in the vessel temporarily, will be displaced by the returning force of the circulation when the patient is recovering from the shock and loss of blood, and recurrence of the bleeding will take place ; or, if the patient escapes this danger, the proper repair of the wounded vessel will be interfered with subsequently and a traumatic aneurysm will be formed. The constant passage of blood and the pressure in the artery will prevent the formation of a firm cicatrix and consequently the vessel will be very liable to yield at this point. The latter is what happened in the case recorded, the unusual feature of the case being that the artery was transfixed by a knife and that it yielded subsequently at two places.

As to the mode of procedure in cases of traumatic aneurysm there can be little difference of opinion that the only effective treatment is to secure the vessel above and below the sac. In some cases this may be combined with excision of the sac, or, if the sac be so large or so closely connected with adjacent parts that its removal would be difficult, any solid contents may be removed so as to allow of early shrinkage. The adoption of rest of the part with pressure upon the sac may be sufficient to cure some small traumatic aneurysms, but such a course of treatment was altogether unsuited to this case. One reason why operation was urgently called for in this patient was the almost complete loss of power and sensation in the parts supplied by the median nerve. There was at first a strong probability that the nerve had been divided at the time of the injury, but the operation showed that the paralysis and anæsthesia were due to the nerve being tightly stretched and spread out over the aneurysmal sac. It is possible that the pressure which was used to stop the primary hemorrhage also aided in injuring the nerve, since anæsthesia was noticed within a day or two of the occurrence of the accident. If the wound had been an inch or two higher up in the arm, where the median nerve is crossing in front of the brachial artery, it is hardly probable that the nerve would have escaped division by the knife.—*Medical Chronicle, October*, 1899.

## 79.—TUBERCULAR OSTEOMYELITIS.

By Angus McLean, M.D.,
Detroit, Mich.; Attending Surgeon, Harper Hospital.

[From Dr. McLean's paper.]

Osteotuberculosis is essentially a disease of childhood and young adult life. Though any of the bones may be affected, the vertebræ and femur are the favourite bony structures for invasion. The general condition of the patient does not always give indications of bone tuberculosis. The disease may be present without any impairment of the general health. When situated in the extremities and uncomplicated, pain is usually the first symptom, and this is often referred to as being in the joint. It may be referred to some distant point, as in tuberculosis of the head of the femur pain is complained of at the knee. It is intermittent in character and more severe during the night. Tenderness is not marked until the wall of the bone has begun to soften. If an area of tenderness can be detected around the epiphysial line and no pain on movement of the adjacent articulation, disease of the bone can always be suspected, and both extremities should be carefully examined. Swelling does not take place until the compact layer is perforated and the periosteum bulges. The involvement of the other tissue soon follows. Redness is not present until the affection extends toward the surface. Atrophy of the limb is an important symptom and takes place from a few weeks to a month or two after the beginning of an attack. When the disease primarily attacks the vertebral column before puberty, it is usually confined to the bodies of the vertebræ. Frequently the first symptom detected is the attitude of the child and its attempts to refrain from vertebral motion. The disease being confined to the bodies, little or no pain can be detected by pressure over the arches, while on sudden or jarring motion the child complains of pain. In young adult life, when the disease has affected the arches, pain can be elicited on pressure.

No definite line of symptoms can be set down, the only difference between a primary osteo and a primary synovial affection being the points of tenderness around the epiphysial margin. The disease attacks the lower extremities much oftener than it does the upper, and more frequently the epiphyses than the synovial membranes, in the proportion of three or four to one. In some cases quite extensive inflammations may take place without producing any noticeable symptoms. The fever thermometer is frequently a great aid, for the slightest tubercular affection has its evening rise in temperature, although it may not be more than half a degree. In all cases the family history should be carefully inquired into and a careful search made for lesions in any other parts of the body. In doubtful cases certain diagnostic measures should be resorted to in order to obtain a satisfactory diagnosis. The exploratory or aspirating needle may be used, the bone having become softened by the disease so that its external layer may be perforated with little pressure, this of itself being of diagnostic value. If a focus is found, a portion of its contents can be removed and subjected to bacteriological examination.

Boechet has recommended ignipuncture, which is performed with a heated needle point of a Paquelin cautery, the needle penetrating the external tissues over the point of greatest tenderness. When the bone is reached, the needle is advanced by rotary movements so as to prevent its impaction. A focus can be detected by the sudden loss of resistance. The ignipuncture has a therapeutic as well as a diagnostic value.

The treatment is constitutional, mechanical, and operative, the last being of special benefit when the bones of the extremities are affected. There is little opportunity for operative interference when the bodies of the vertebræ are invaded, excepting that of aspirating or freeing an abscess cavity of its contents. To receive benefit from the constitutional and mechanical treatment, an early diagnosis is of the greatest importance. It is much easier to prevent a spinal curvature or deformity than it is to relieve one after it has taken place. A plaster-of-Paris jacket, a brace, or splint applied so as to support the spine and keep it at rest, the administration of constitutional remedies, with good hygienic surroundings, persisted in for two or three years, will terminate many cases favourably. Under this régime disintegration may be arrested and an osteosclerotic wall formed around the focus, which may remain latent or undergo calcareous degeneration. The same method is applicable to affections of the extremities, but there are more amenable to operative treatment. When the lesion is entirely removed and the wound closed, there need be no further anxiety of the adjacent articulation becoming invaded or of secondary infections of other tissues of the body.—*Medical Age, July* 25, 1899.

## 80.—REMARKS ON TUBERCULOUS ADENITIS.

By George Morgan, F.R.C.S. Edin., &c.,
Senior Surgeon to the Alexandra Children's Hospital, Brighton.

[From Mr. Morgan's paper.]

*Treatment.*—If tuberculous glands appear, and they are discovered in an early stage, undoubtedly a great deal can be done for their cure without operative interference. As regards the general constitutional treatment, I have no new suggestion to offer. It is the local treatment in which I am specially interested, and as to which I wish to make a suggestion. Teeth, tonsils, and naso-pharynx should be attended to. Stomatitis and small ulcers of the lips and gums should be promptly treated. In treating the glands themselves we should always think of the part of the skin or mucous membrane the diseased gland represents, and then apply the remedy to that spot. For instance, the gland at the angle of the jaw and the upper deep cervical drain the tonsil, therefore apply the remedy to the tonsil. A late colleague of mine at the hospital had a patient of five with a number of markedly enlarged glands of the deep cervical group and also the suprahyoid gland. The skin was not adherent, and they were freely movable. Dr. Whittle was about to excise them, but postponed the operation that the above plan of treatment might be tried first. For six weeks the pigment was painted on the tonsils and on the gum below the lower incisor teeth. At once improvement set in; eventually the glands entirely disappearing. The application is composed of iodine, 12 grains; potass. iodid, 15 grains; ol. menth. pip., ♏ ij; glycerine, ℥ j. It will not affect all glands, but if applied before softening takes place, it undoubtedly reduces the majority. I have been using it now for seven years in a large number of cases, and always adopt that line of attack first. Comparing the experience of the last seven years with those of the seven years previous, I have no hesitation in saying that the results have proved very gratifying. For the superficial glands draining the skin I use iodide of potassium ointment, well rubbed into the skin representing its surface of absorption.

The old method of direct injection of iodine into the gland invariably spoiled the syringe, injured the child, and damaged the surgeon's reputation. If, after a fair trial of constitutional and local treatment, the glands still increase in size or show signs of softening, the sooner they are removed the better. For those which are completely broken down it is better to incise the capsule at once and scrape it out with a sharp spoon, then dress the inside of the capsule with pure carbolic acid ; afterwards, if the capsule can be teased out, so much the better ; but it is a pity to waste time trying to dissect out the remains of a gland that is, in reality, only a bag of pus. It is certain to burst ; and by the dissection the connective tissue around the gland has been opened up, into which the tuberculous pus is distributed and may be carried to other glands. In excising glands, no pressure should be made on the gland, either by the fingers or by pressure forceps of the various special types. If several in a group are affected, the lower one should be taken first, working up in the opposite direction to the lymph current. The danger of pressure is, that some of the tuberculous material may be pressed from the medulla of the gland into the efferent vessels, the valves of the lymph vessels allowing the current to pass by way of the efferent vessels, and preventing its passage into the afferent vessels. To my mind this is the only explanation of a quick relapse a few days after the excision of glands. I have seen this happen not infrequently both in my practice and in the practice of other surgeons. Perhaps the dissection has been a very careful one ; the gland has come out without bursting, the wound has healed by first intention ; but to the chagrin of the surgeon no less than to the disappointment of the patient, in seven or fourteen days other glands of the same series appear as large as, or even larger than, the one excised. Since using greater care in avoiding pressure on the gland, I have certainly had little or no trouble from this source.—*Pediatrics, October* 15, 1899.

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## 81.—SYPHILITIC DISEASE OF JOINTS.

By Dr. Pielicke.

The author (*Berl. Klin. Woch.*) says that, according to Virchow, the diseases of the joints can be classified into two ways, viz., (1) simple inflammatory affections without specific new formation, and (2) those which are found together with characteristic changes in syphilis. Various classifications have previously been made, but this is the best. In the first form the large joints are the most frequently attacked, and especially the knee-joint. It appears both monarticular and polyarticular, and the clinical symptoms are distinct effusion with severe pain, especially at night. There is usually a high remittent temperature, so that there is a great similarity with acute rheumatism. In the less severe cases there is pain, swelling, and temperature, and the development of the various symptoms is slower, and in a more subacute manner. This form usually appears in the so-called secondary stages of syphilis, together with the skin eruptions and affections of the mucous membrane. Usually these joint affections only occur once, but Mracek reports two cases where the joints were affected more than once. Pielicke has also seen a case in which the joints were twice attacked after treatment. Very rarely acute and subacute inflammation of the joints occur in congenital syphilitic children. Here there is acute pain in the joints, usually the shoulder, with effusion, swelling and redness of the skin. Hunicken relates a case where the son of syphilitic parents, aged ten, developed pain and effusion into both knee-joints without any special cause. After four weeks' duration swelling of the tibia confirmed the diagnosis. Recovery took place by mercurial treatment. Guterbrock also describes a case of suppuration of the elbow-joints, which healed under sublimate baths. The chronic forms may also attack the larger joints both in secondary and tertiary syphilis, but more especially in the tertiary stage. There may be increase of fluid in the joint, and thickening of the capsule and functional disturbances. This form of inflammation has never been seen in hereditary syphilis. The issue of acute and subacute inflammation is usually favourable as soon as an anti-syphilitic treatment is commenced at the right time. In some of the cases the affection will become chronic, with effusion and thickening of the capsule, as before mentioned, and in course of time become incurable, and in severe cases pseudoankylosis may take place. From a pathological point of view, in the severe tertiary cases the following changes have been seen, viz., increase and thickening of the synovial fluid, the synovial membrane becomes ragged, especially at the edges of the inner ligament of the joint ; microscopically the ragged parts consist of thick connective tissue, poor in cells, elastic tissue and loops of vessels, its upper surface producing endothelium. The cartilage cells are pressed lengthways and flat, similar to spindle cells of the connective tissue ; they stain badly or not at all. The ground-work of the cartilage is streaky and fibrous, parallel to the surface of the joint.

The second form of inflammation is more frequent, and is mostly due to specific syphilitic diseases and gummata of the capsule, joints and bones. Finger calls them deuteropathic. Most frequently the knee-joint will be first attacked, then the small joints of the fingers and toes, then the hand, hip, and ankle-joints, finally the sterno-clavicular joint. The clinical symptoms are as in the first form, viz., severe pain, especially at night, and variable temperature. The function of the joint is severely injured, and one can feel crackling and grating. This form is usually seen in acquired syphilis, but cases have been seen in congenital syphilis. The termination is favourable by the use of antisyphilitic remedies, but ankylosis may occur in spite of all precautions. Periostitis and osteomyelitis may also occur, periostitis affecting usually the large joints, and osteomyelitis the small bones of the hand and foot. Ulceration and suppuration may also occur. In some cases the pads of fat, fibrous parts of the joint, and even the entire joint, are changed into a gummatous mass ; in other cases the gummata are more distinctly single. In congenital cases more frequently there is suppuration and formation of subperiosteal abscess. Pielicke, in conclusion, says that the best mode of treatment is by the use of mercury and iodide of potassium, preferably in the form of ointments and injections. He says injections should not be used in those cases where there is severe pain in the joints. In the case of suppuration, surgical aid may be necessary.—*Abstract in Treatment, September* 28, 1899.

## 82.—THE DEFINITION AND CLASSIFICATION OF TUMOURS.

By Charles Powell White, M.B., F.R.C.S.,
Demonstrator of Pathology, Yorkshire College, Leeds.

[The following is taken from Dr. White's interesting paper :]

As a basis of definition and classification I take the following premises :—(*a*) The living organism is made up of numerous organs arranged in a certain typical manner. (*b*) Each organ is made up of different tissues, arranged in a certain typical manner. (*c*) Each tissue is made up of cells and intercellular substance, arranged in a certain typical manner. Now, the characteristic feature of tumours is that they are atypical in structure. Thus some tumours (*e.g.* dermoids) contain organs or parts of organs (skin, teeth, &c.) arranged atypically. Others contain tissues which, though typical in themselves, are arranged atypically, *i.e.* so as not to form an organ. For example, fibroma is a tumour containing as its characteristic element typical fibrous tissue, which however is not arranged so as to form a tendon or fascia. A third group of tumours is characterised by the presence of cells, which are not arranged so as to form a recognisable tissue. For example, carcinoma contains epithelial cells, which are not arranged so as to form a distinct epithelium, either surface or glandular.

The definition I propose is this :—*A tumour is a mass of cells, tissues, or organs, resembling those normally present in the organism, but arranged atypically, which grows at the expense of the organism without at the same time subserving any useful function therein.* This definition will be found to satisfy the following conditions : (1) It is founded on a morphological basis, and therefore involves the adoption of no theory as to the origin of tumours. (2) It excludes hypertrophy and hyperplasia, because in these conditions the tissues are arranged as they are in the normal state, the only difference being in the size or number of the constituent elements. (3) It excludes inflammatory swellings because inflammation, being "the local attempt to repair an injury" (Adami), subserves a useful function. It excludes parasitic swellings, such as hydatids, because the cells, tissues, or organs are to resemble those normally present in the organism. (4) It excludes retention cysts, because a retention cyst is merely a dilated duct, due to obstruction of the outlet, and preserves its typical structure. (5) It includes all tumours, properly so-called.

*Classification.*—Two methods of classifying tumours have been adopted by authors—the embryological and the morphological. Now, there are two great faults in the embryological system of classification, which appear to me to be insuperable :—(1) The developmental origin of some parts of the body is not as yet fully understood. The Wolffian duct, for example, generally supposed to be mesoblastic in origin, is now supposed by some to be epiblastic or hypoblastic. (2) Epithelial tumours (papilloma, adenoma, carcinoma) are always classified as epiblastic or hypoblastic in origin, and yet in all text-books such tumours are described as occurring in mesoblastic organs, such as kidney, testis, ovary, and uterus. Also neuroma and glioma, though of epiblastic origin, and classed with the mesoblastic tumours. This system also has the objection that it separates malignant endothelial tumours from the carcinomata, although they sometimes cannot be distinguished histologically. These difficulties are never alluded to in text-books, and few authors have called attention to them. We must, then, fall back on a morphological classification, which offers no such difficulties. The classification which I propose is founded on the same premises as my definition, and it may be deduced from the definition. I divide tumours into three classes :—Class A.—*Organ Tumours* : Those tumours which are characterised by the presence of organs or parts of organs arranged atypically. Class B.—*Tissue Tumours :* Those tumours which are characterised by the presence of tissues arranged atypically. Class C.—*Cell Tumours*: Those tumours which are characterised by the presence of cells arranged atypically.

In Class A come teratomata, including dermoids and mucosal cysts. In Class B are placed all simple tumours, subdividing them into tumours of supporting tissues and tumours of specialised tissues. In Class C are included all malignant tumours, namely, sarcoma and carcinoma. In considering the definition above, I have quoted examples of each of these classes. Any other tumour might have been taken as an example. Take for instance osteoma. This is a tumour composed of typical bony tissue, which forms an irregular mass which cannot be recognised as a distinct bone or part of a bone. It therefore falls under Class B. I think that this classification has the following advantages :—(1) It is founded on a morphological basis, and involves no theory as to origin or etiology. (2) It is a rational and uniform system. (3) It corresponds with the clinical division into simple and malignant tumours. To which may be added that it is a great advantage to have the classification and definition founded on the same basis.

## CLASSIFICATION.

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| CLASS A —*Organ tumours* . | | | Teratoma, including dermoids and mucosal cysts. | | |
| CLASS B.—*Tissue tumours.* | *Supporting tissues.* | Mucous tissue | Myxoma | | |
| | | Fibrous tissue | Fibroma | | |
| | | Cartilage | Chondroma | | Hyaline.<br>Fibrous. |
| | | Fat | Lipoma | | |
| | | Bone | Osteoma | | Compact.<br>Cancellous. |
| | | Neuroglia | Glioma | | |
| | *Specialised tissues.* | Muscle | Myoma | | Rhabdo-myoma.<br>Leio-myoma. |
| | | Nerve | Neuroma | | Ganglionic.<br>Fibrous. |
| | | Lymphoid tissue | Lymphoma | | |
| | | Gland epithelium | Adenoma | | |
| | | Surface epithelium<br>Endothelium | Papilloma, including<br>Cystoma | | Onychoma (epithelial).<br>Keratoma (epithelial).<br>Psammoma (endothelial). |
| | | Vascular endothelium | Angeioma | | Capillary.<br>Cavernous. |
| | | Lymphatic endothelium | Lymphangeioma | | Capillary.<br>Cavernous. |
| CLASS C.—*Cell tumours.* | | Epithelial cells<br>Endothelial cells | Carcinoma | | Squamous.<br>Spheroidal.<br>Columnar.<br>Endothelial. |
| | | Cells of connective tissue type (also muscle cells) | Sarcoma | Pure | Round-celled.<br>Spindle-celled.<br>Giant-celled. |
| | | | | Compound | Osteo-sarcoma.<br>Myo-sarcoma, &c. |

—*Journal of Pathology and Bacteriology, August*, 1899.

## 83.—RADIOGRAPHY.

By Professor v. **Bergmann**, Berlin.

[The author spoke of the value of the Roentgen photography before the Society of Naturalists and Physicians.]

To anatomy—without an accurate knowledge of which therapeutics were useless—the Roentgen rays rendered useful service. For the diagnosis of the diseases of the internal organs it was comparatively valueless. From the fleeting images afforded by the light on the screen, for instance, it was not possible to determine commencing tuberculosis. Percussion was a more certain guide as to cardiac area and pleuritic effusion than the light, and never had any decided conclusion been reached by it as to the position of gall-stones or vesical calculi. The importance of the new discovery was greater for surgery. The rays had done the most service in the discovery of foreign bodies and in fractures of bones. The discovery of foreign bodies and the tracking of the path they had taken in the system, and the treatment resulting from this knowledge were the greatest achievements for which medicine was indebted to the rays; they not only facilitated the removal of foreign bodies, but they allowed of others being left in that would have been sought for by operation before their employment, as such foreign bodies could often be allowed to remain in without fear of doing injury. Thus projectiles often remained in the system without doing any harm. Their removal would be more dangerous, as shown in many cases of bullet and splinters healed up in the flesh, as their removal would often necessitate dangerous and deep operations. Thus the French surgeons in the *attentat* upon Labori recognised that they would do better to leave the ball alone. They made it possible for the distinguished advocate to plead again a few days after being wounded. There were cases in which bullets were in the lungs, in the thorax, near to the heart, and even reaching this; the persons implicated bore these foreign bodies without being conscious of their presence.

The representations of the bony system had been enriched by the Roentgen rays. By a large number of Roentgen pictures, the speaker showed normal and morbid developments of the bones, particularly of the long bones, and more especially those of the hand. From other pictures not only could the age of children be recognised, but also the diseases that influenced growth. Rachitic children could now, by means of the rays, be much more successfully treated, as the Roentgen image showed accurately the favourable point of time for operation, which before could only be made out with great trouble, and not with certainty. It could now be accurately determined from what basic diseases dwarfs were developed, and French physicians had already successfully employed thyroid preparations where by Roentgen examination they had recognised the morbid foundation for dwarf growth. The observations made by the radiograph on the so-called Lilliputian troupe were interesting. Through illumination had shown that their bones, apart from their smallness, were quite regularly formed, that they were furnished with well-developed epiphyses. In fact, the people were still growing. One of them, between his 26th and 36th year had grown 20 cm., and this at a time when, in the ordinary individual, growth had entirely ceased. If this went on, and the Roentgen image showed a prospect of it, in his old age, he would have to leave the troupe through becoming too tall.

The rays were also useful for the discovery of anomalies, such as absent joints or superfluous parts. Not less interesting were the cases of hands with the middle finger consisting of four, or, as in the thumb, two joints. Nowadays Roentgen illumination was sufficient to determine the actual condition. This might under certain circumstances have a surprisingly disagreeable effect on the individual concerned, as the following very recent case showed. A workman had been injured by a machine. He complained of pains in the lower part of the leg near the ankle. A bone was really felt there that was not present in the normal skeleton. This bone was supposed to have been split off by the accident, and then healed in. As the man was supposed to be unfit for work, he received considerable compensation. The rays showed the like abnormality on the other leg also. It was, therefore, proof that the peculiar condition could not have been caused by an injury. The incorrectness of the professional opinion was brought to light by the treacherous rays, and the man lost his compensation.—*From report in Medical Press and Circular, October* 11, 1899.

## NERVOUS SYSTEM.

### 84.—A CASE OF BULLET IN BRAIN (NINE MONTHS): ABSCESS: OPERATION: RECOVERY.

By Augustus H. Bampton, M.Ch., M.D., Ilkley.

On Christmas Eve, 1896, a lad accidently shot his brother with a Derringer saloon pistol. The bullet wound was just in front of the left motor area. There was no loss of consciousness, although the lad fell to the ground and shortly vomited.

On the same day, Mr. Ward, of Leeds, trephined over the wound, the patient being under ether, and found on removal of the bone that the inner table of the skull, some hair and a thin stripping envelope of lead had penetrated the brain. These were removed, but the main portion of the bullet could neither be seen, felt, nor traced. As the bullet might have gone through the brain to the other side, or dropped down, it was considered unjustifiable to grope about the brain substance when there was no indication or symptom as to its whereabouts. It was therefore decided to close the wound after thorough cleansing and await symptoms, or the use of the *x* rays to localise the bullet. The patient made a good recovery, being kept on the lightest of diet. Temperature kept subnormal, and pulse slow (50 to 60). If solid food was given vomiting took place. There was pain over the left orbit, and constipation. There was no paralysis and no twitching. The *x* rays were used on two occasions in two positions with negative results. It was observed that there was increased headache after each attempt to photograph. After six weeks the patient was allowed to get up and was able to go about. Any imprudence or indulgence in heavy food on the part of the patient brought back vomiting, eyeache, and headache, necessitating his return to bed and starvation diet ; at which time slight ptosis of left eyelid was noticed, and the face was slightly drawn to the left side. Under this treatment improvement invariably set in. After some eight months the patient was well enough to go to Morecambe, and there he had a convulsion, with unconsciousness, after riding on a tramway car. He was seen by a medical man, but no muscular movements were specially noticed. He returned to Ilkley, where he had two or three more convulsions, one of them being accompanied with unconsciousness ; the others were Jacksonian in character. I did not see him in one, but I was told that some twitching of the left side of the face occurred ; beginning in the left eye and extending to the face. The patient then rapidly became worse, with increased headache and vomiting, slow pulse, depressed temperature, great drowsiness, also paresis of muscles of right side of face. Double optic neuritis was observed. I then felt sure that I had to deal with a cerebral abscess, which was increasing in size and giving rise to these symptoms by pressure on the motor area.

In the absence of Mr. Ward from home I sent the patient in a through carriage, in a swung hammock, to Mr. Victor Horsley. Mr. Horsley, confirming my diagnosis, operated the next day, and came upon the abscess with the bullet in the abscess cavity. The specimen was removed entire by means of two pairs of forceps, and is now in the museum of the University College Hospital. The convalescence was eventful only owing to the celebral hernia that formed. It became so large that Mr. Horsley found it necessary to slice off a portion. In three months the patient had sufficiently recovered to return to Ilkley, when the hernia was about the size of a peach. By the direct application in powder form of boric acid and alum daily to the brain substance, and careful dressing and bandaging, the tumour gradually shrank, and the scalp grew until it quite healed in another three months' time. The patient kept quite well for seven months, but one day after unusual exertion he had another fit; since then there have been three convulsions, one after bathing, one after vomiting, one after measles, with temperature of 104°. But it is now nine months since the last fit, the causes being associated in each instance with sudden alteration in the cerebral circulation. The patient is bee farming, and able to enjoy life and sports.

The principal points of interest seem to me to be the tolerance of: (1) The brain substance to injury. (2) The effect of light diet in the controlling of cerebral vomiting. (3) The long delay in the formation of the abscess. (4) The absence of motor symptoms in the first instance owing to the escape of the motor area. (5) The rapid onset of acute symptoms as soon as the abscess became a certain size and encroached upon the motor area. (6) The presence of unconsciousness in epileptiform convulsion of traumatic origin. (7) The rise of temperature and pulse-rate after the operation. Facial paralysis supervened after the operation, and persisted for some months, but eventually completely cleared up.

In conclusion, I wish to acknowledge the ready help received in the conduct of the case from my partner, Dr. Alex. Milne. Since this case, during the last twelve mouth I have seen (in the North alone) reported inquests on two fatal cases of lads being shot by these so-called toy pistols. It is an anomally in our legislation that whereas grown men must take out a licence to carry firearms, children may and are supplied with such dangerous instruments of self-destruction without restriction of any kind, and the law supplies no remedy. Children may not fog their brains with drink, but they may be supplied with the means of blowing out their brains *en bloc* for half-a-crown.

The specimen showed the bullet attached on the outer side and deepest portion of the abscess wall, and proves that it is not the bullet *per se* that is the cause of suppuration, but the *materies morbi* (staphylococci) that it carries with it; and that it is not sufficient merely to remove a foreign body to avoid danger subsequently, but the whole of the track of the bullet must be thoroughly cleansed and rendered aseptic.—*British Medical Journal, October* 28, 1899.

## 85.—THE SURGICAL TREATMENT OF TUMOURS WITHIN THE SPINAL CANAL.

By JAMES J. PUTNAM, M.D.,
Professor of Diseases of the Nervous System, Harvard Medical School ; and

J. COLLINS WARREN, M.D.,
Moseley Professor of Surgery, Harvard Medical School.

[The authors relate three cases operated upon. In the first case in a lady aged 52 years an intradural tumour was removed, and considerable improvement was obtained. In the third and fourth cases a considerable relief of symptoms was noted.]

How large is the surgeon's field for operation in the spinal canal? This is a question which the physician has to consider, in view of the great uncertainty which must attend his diagnosis as regards the exact position of the tumour—namely, whether it lies dorsally or ventrally with relation to the cord. The possibility of drawing the cord aside to a certain extent, cutting one or two dorsal nerve-roots, if necessary to accomplish it, has been contemplated by various surgeons. In fact, Kümmell removed a laterally-placed sarcoma of the body of a vertebra and scraped out the cavity, but no tumour has, to my knowledge, been removed from the ventral portion of a vertebral body. It is an important inquiry how nearly, in the cases which are counted as successful, such as the first of those reported by us, the improvement is likely to approach absolute recovery ; to what extent the degree of probable improvement may be foretold ; and what signs make its occurrence improbable. Very few cases are actually at our command—if we omit those of Pott's disease—for answering this question. In most of the cases that ended in recovery the paraplegia had been complete but for a very brief period, but in the Gowers and Horsley case it had existed for several months. In Pescarolo's case, where the patient had been paralysed for some years, there was no improvement at the end of five months after operation. No one need be disappointed at the occurrence of a temporary increase of paralysis after operation, or at a delay in the onset of signs of improvement. Some return of sensibility is likely to show itself by the end of a day or two at the latest, but no voluntary motion may occur for one or two weeks. The earlier movements, as in the Gowers and Horsley case, and in ours, although initiated by voluntary effort, may seem to the patient, and at first to the physician, to have all the character of involuntary spasm. It is probable that, as a rule, the prospect is better in the cases where the paralysis develops slowly, as from the gradually increasing pressure of the large flat masses of inflammatory exudation met with in Pott's disease, than where it comes on rapidly, since in the latter case the nerve-elements and bloodvessels do not have the same opportunity to accommodate themselves to the lessening space. In cases of the former sort, a delay of a few weeks, or even days, in operating may be of far more consequence than that of an equal number of months under other circumstances. Schlesinger points out, and his opinion is corroborated by that of others, that the cause of the paralysis is complex, and that it includes the effects of pressure, anæmia, necrosis, œdema, and also of inflammation. The latter element is of special importance, because, in the opinion of Horsley and others, it is liable to increase after operation, though, on the other hand, Allingham offers evidence that it may occasionally diminish. Indications that the cord is not only compressed but softened are, however, in Bruns' opinion, not a positive contraindication to operation.

To what extent is it worth while to operate where there is little prospect of inducing a cure? This is a question which each physician and surgeon must answer for himself, and with reference to the individual circumstances of each case. I do not, myself, believe that the surgeon should throw the decision too much upon the patient. The alternatives which he is bound to offer (let him express them as simply as he may) are bound to be bewildering, and the choice which the patient makes is far less likely to be a good one than that which the conscientious physician can make for him. Bruns believes that when the diagnosis of tumour is fairly made it is usually best to operate, but that this diagnosis can rarely be conclusive until signs of actual cord pressure have appeared, and even then the outcome is largely a lottery.

The second and third cases reported by us give some ground for greater hopefulness in prognosis than an interpretation of reported facts in the light of our narrow knowledge might seem to justify. Sometimes the operation appears, in accordance with some subtle principle, to induce to a new "set" to the tendencies at work. The tumour may perhaps be led to grow in a new direction; or, as in the second case reported by us, the temporary relief to pain may introduce a fairly persistent relief. The history of neuralgias of other sorts gives abundant illustrations of this sequence. Cases of intramedullary tumour, as one might suppose, have never been operated on successfully. The nearest approach to this was in the case of Church and Eisendrath, where a well-defined spindle-celled sarcoma was removed from the posterior half of the cord. Unfortunately the wound became septic; had it not been so, the writers think the patient might have done well. Horsley and Crofts (cited by Horsley) have tapped, the one the cavity in a case of syringomyelia (case of Gowers), the other a "cyst"; but with only temporary improvement. I have done a lumbar puncture in a case of syringomyelia, hoping that altered circulatory conditions might bring relief to the persistent pain, but without effect.—*From Drs. Putnam and Warren's paper in the American Journal of the Medical Sciences, October*, 1899.

## ALIMENTARY CANAL.

### 86.—GUNSHOT WOUNDS OF THE ABDOMEN.

By Colonel Stevenson, R.A.M.C.,
Professor of Military Surgery, Netley.

[The following is taken from Colonel Stevenson's remarks in opening the discussion at the meeting of the British Medical Association, 1899.]

The proper time for performing laparotomy is the earliest moment after diagnosis of penetration has been arrived at, if the patient's general condition be such as to permit of surgical interference. After twelve hours the chances are against recovery, and after twenty-four to forty-eight hours the case is almost hopeless; where peritonitis has fully developed the apertures in the gut may not be found, or if found, the tissues will not bear suturing. Profound shock and collapse may be considered as contraindications for operation in these cases, or rather these symptoms should be looked upon as indications for delay until sufficient recovery from them has taken place. If it be apparent that the collapse is due to internal hemorrhage, an additional risk must be incurred and the operation proceeded with, for the patient will not respond to warmth and stimulation, and the collapse can only end in coma and death if the bleeding be not controlled. A long interval having elapsed before the patient comes under the surgeon's notice is also a contraindication for operation, because peritonitis will have fully developed, and success is unlikely; or, on the other hand, if symptoms have not by this time appeared, this goes to show that the case is of the exceptional kind which requires no operation.

The urgent matter to be attended to when the patient first comes under treatment for a gunshot wound of the abdomen is his recovery from the marked condition of shock and collapse, which is nearly always present, by the application of external warmth and stimulation. The subcutaneous injection of ether or strychnine, or of both together, is better than the administration of diffusible stimulants by the mouth, for the less fluid put into these patients' stomachs the better. If there be no probability of wound of the lower bowel, stimulated enemata and enemata of hot water may also be used with good effect. While recovering from shock the patient should be kept as quiet as possible, and the wound or wounds in the parietes should be covered with gauze wrung out of an antiseptic lotion. It is, of course, unnecessary that I should refer to the details of the precautions which must be taken to prevent contamination of the peritoneum by micro-organisms; we are all familiar with them, and we all admit their vital importance. When the patient has recovered from the primary shock of his injury the wound should be examined to determine the fact of penetration or otherwise, for all modern treatment depends on this one point. In most cases the aperture will have to be enlarged for this purpose; incisions should be made upwards and downwards from the edge of the wound, for half an inch in each direction and down to the peritoneum, and the finger inserted, no instruments being used. In this way there can be no difficulty in the diagnosis, and if it be found that penetration has occurred the operation should be proceeded with at once. In the vast majority of cases the incision should be made in the middle line, or a little to one side through one of the recti muscles. The exceptions to this general rule are the cases in which the situation of the wound points to injury to the liver, or to the stomach, when the aperture in the abdominal wall is well over to the left side. The incision should be of sufficient length to afford ample room for the necessary manipulations within the cavity. Immediately the abdomen has been opened the effused blood should be removed, and the bleeding points carefully sought for and ligatured. It is often extremely difficult to find them, and Senn has lately suggested compression of the abdominal aorta through the incision as a useful means towards this end. Colonel Whitehead, in his report of the surgery of the late Tirah campaign, shows that of the five laparotomies done on that expedition four proved fatal from hemorrhage, the cause of which had not been ascertained, and only one from peritonitis. When the hemorrhage has been controlled the wounds in the intestine should be attended to. No correct idea of the number of the latter can be formed until the intestine has been examined; the perforations may vary in different cases from one to a dozen or more. Eighty-one cases, as recorded by Greig Smith, gave an average of 5·4 perforations. They may be few or many; they may be close together or far apart; but the more nearly the bullet has travelled from side to side the greater is the number of apertures likely to be.

It is most important, considering the great differences observed in the number and situation of the visceral lesions in different cases, and the fatal result to be expected from overlooking even one perforation, that the whole intestinal tract should be inspected from end to end. MacCormac, Nancrede, Senn, and many others consider that the gut should be examined from the cæcum to the stomach and to the rectum. McGraw, of the United States, and Greig Smith suggest that it is sufficient to examine the viscera which lie in the track of the bullet. The complete examination takes considerable time, and adds greatly to the shock of the operation, but the numerous cases which have proved fatal in consequence of a perforation having been overlooked are powerful arguments in its favour. The examination should then be complete if possible, but if the patient's condition will not permit of a prolonged operation, it may be necessary, though at some risk, to omit it, and to take it for granted that viscera which apparently do not lie in the track of the bullet are intact. Each perforation in the intestinal wall should be dealt with as it is discovered, either by simple suturing by Lambert's method, or by a resection, as the size and position of the injury may indicate. Resections are necessary under certain conditions ($a$) when the loss of substance in the tube will cause a diminution of its calibre by one-third; ($b$) when several perforations are found close together; and ($c$) when the mesenteric edge is implicated. When injuries requiring resections are found within a foot or even more of each other, it is better, as reducing the shock and duration of the operation, to excise the portion of intestine between them, thus enabling one circular enterorrhaphy to restore the continuity of the tube.—*British Medical Journal, October* 21, 1899.

## 87.—ACUTE ABDOMINAL SYMPTOMS DEMANDING IMMEDIATE SURGICAL INTERVENTION.

By Maurice H. Richardson, M.D., Boston.

[From Dr. Richardson's paper :]

Unfortunately, at the critical period of invasion, the patient is not always seen even by the family physician, and too often the favourable moment for operation is lost. Moreover, even when seen in season, the case often presents features by which its gravity is masked. Too often, it must be admitted, symptoms of the gravest nature are misinterpreted by even the most experienced observers, or, if understood, are watched in the vain hope that they are not so bad as they seem. Finally, it must be added, the dangers of the operation itself, even when skilfully performed, are by no means small. It is obvious that the first and most important factor in a specific case is loss of time; for the remedy cannot be suggested or applied with any degree of success unless an early opportunity to do so is given. The loss of time dependent upon the patient or his friends can hardly be prevented. Yet it is questionable whether it would be wise to disseminate widely the initial symptoms of so common and serious an abdominal disease as appendicitis; for if we should do so, to the nervous and apprehensive every transitory colic would be the signal for great alarm. I am impressed every day by the reckless disregard of professional warnings, when I see patients dying of appendicitis, not as the result of operation, but as the result of delay on the part of friends. Fortunately, however, the onset of acute abdominal lesions that must be treated surgically, if at all, is so ominous of disaster that even the layman is usually alarmed.

These lesions comprise all diseases of the abdominal organs which may suddenly, with or without warning, place life in jeopardy. Acute abdominal emergencies, as I have observed them, comprise three general groups: (1) Those in which hemorrhage is the chief factor. (2) Those in which peritonitis is the chief factor. (3) Those in which intestinal obstruction is the chief factor. These three classes include almost all possible emergencies. Certain lesions may belong to more than one group—for example, lesions which, like volvulus, cause, first, intestinal obstruction, and later, necrosis of the intestinal wall. (1) Abdominal hemorrhages are either (*a*) post-operative (*b*) traumatic; (*c*) from ruptured extra-uterine pregnancies; (*d*) from ruptured hemorrhagic cysts; (*e*) from gastric ulcers (2) Peritonitis may be owing to (*a*) extravasations from intestina tract occurring in appendicitis, perforating gastric ulcers, benign and malignant; perforating intestinal ulcers—tubercula and simple, cancerous, typhoidal; trauma—rupture of intestine stabs, gunshot wounds; (*b*) extravasations from other viscer occurring in acute cholecystitis, pancreatic necrosis, rupture of bladder; (*c*) rupture of abscesses, of the liver, kidneys, Fallopian tubes, and other regions; (*d*) ovarian and other tumours with twisted pedicle; (*e*) acute pancreatitis and fat necrosis. (3) Intestinal obstruction with necrosis may be owing to internal strangulation, volvulus, intussusception, mesenteric embolism and thrombosis. Simple obstructions without necrosis may be owing to bands, foreign bodies including enteroliths, pressure from tumour external to the intestine, strictures of the intestine. In addition to the foregoing there are certain general infections without local causes; such are the forms of rheumatic and chemical peritonitis; peritoneal manifestations of general septicæmias.—*Boston Medical and Surgical Journal, October* 19, 1899.

## 88.—TREATMENT OF PERFORATING ULCERS OF STOMACH AND DUODENUM.

The prognosis of perforating ulcers of the stomach and intestine would seem to improve in the same degree as the practitioner learns to make early diagnosis of these cases and to immediately secure surgical treatment. According to Lennander, of Upsala, who presents a study of his cases of peritonitis following ulcers of the stomach and duodenum on which operations were made during the years between 1889 and 1897, the statistics so far published show that one-fourth to one-third of the cases of perforating ulcers of the stomach or duodenum which are operated on are saved. The first condition in order that a large number of cases of this kind may be saved is, that physicians abandon the idea that their first duty in such cases is to alleviate pain. The pain should, on the other hand, guide to a diagnosis, the principal element of which is: here must be operated at once, or, an operation is not indicated, at least not an immediate operation. If the treatment is begun with a large dose of morphine and warm applications, then the patient as well as the physician are led into false expectations, which are succeeded by cruel disappointment when the abdominal distension indicates the existence of a diffuse peritonitis. Even when it is determined that an immediate operation should be made, little or no morphine should be given, because of the danger of intestinal paresis after the operation.

According to Lennander, the diagnosis of perforating ulcers of the stomach and duodenum rests on the history of previous symptoms of ulcers, on the appearance of violent pain in the epigastrium, with or without symptoms of shock, with or without vomiting, on the rigidity of the abdominal muscles, and on local tenderness. The abdominal incision should at once be made of sufficient extent to exactly determine the situation of the perforation and the extent of infection of the peritoneum. The perforations, which may be situated on the anterior or posterior surfaces of the stomach, or on any of the different parts of the duodenum, should be closed by bringing the serous surfaces together over a large extent and without tension, preferably by two rows of Lembert sutures. In case such closure is not possible, then the perforation should be covered by omentum and the region separated from the rest of the abdominal cavity by means of tampons. In the vicinity of the orifices of the stomach attention must be paid to the prevention of narrowing or bending during closure of the ulcer. This narrowing is best avoided by uniting the surfaces in a vertical direction with respect to the long diameter of the stomach or the superior horizontal part of the duodenum. When the perforation has been closed, all parts of the abdominal cavity which appear to have been infected are cleansed in the most painstaking manner, especial attention being given to the left subphrenic space. Inasmuch as a high degree of meteorism prevents careful cleansing of the abdominal cavity, an early operation is specially indicated. All those places in which exudate and pus are likely to become collected should be drained by means of gauze or tubes.

The prognosis depends principally on the length of time at which the operation is made after the perforation has taken place, also on the quantity and quality of the contents of the stomach which have become extravasated into the peritoneal cavity. The majority of the deaths have been caused by diffuse peritonitis: next in order come the subphrenic abscesses, and in a few cases pelvic abscesses. While pelvic abscesses are readily diagnosed and operated on, the accumulation of pus in the subphrenic spaces is more difficult of treatment, because they are likely to early infect the pleural cavity, the lungs and the pericardium, and to become the starting-points of pyæmia and septicæmia. Subphrenic abscesses should not be emptied by means of transpleural operations in other cases than those in which an empyema exists or in which the pleural cavity is obliterated. In all other cases the incision should run along the costal arch, together with, in some cases, resection of the ribs below the lower limit of the pleura, according to the method originally proposed by Lannelongue in 1887. When a perforating gastric or duodenal ulcer has been diagnosed, but operation for some reason or other not determined on, then there should be given no food whatsoever by mouth for at least one week, even if the patient's general condition improves so greatly that the original diagnosis becomes questioned.

Lennander's cases may be summarised as follows: No operation: One case of subphrenic abscess following perforation of the stomach, in a woman aged 36 years; recovery. Eleven cases were operated upon. In six there was a diffuse peritonitis, which in two cases followed perforation of duodenal ulcers, three cases perforation of gastric ulcers on the anterior surface of the stomach, and in one case on the posterior surface. In four of these cases the ulcers were found, and in three they were completely closed by means of sutures, in one incompletely sutured and tamponed. One of the cases operated on fifteen hours after the perforation died from diffuse peritonitis, in the other three the peritonitis subsided. Nevertheless, one died on the seventeenth day after the operation, from sepsis following an incompletely drained subphrenic abscess; another died two months and twenty-two days after the operation, from purulent pericarditis, due to a small subphrenic abscess; the third case died three and one-half months after the operation, having left the hospital in apparently good condition, on account of hemorrhage from the bowels. The other two cases of diffuse peritonitis, in which the ulcers were not sutured because not found, died three to four days after the operation. In five cases there was found a circumscribed suppurative peritonitis, which, in two cases followed a ruptured duodenal ulcer, in two cases ruptured gastric ulcer, and in one followed the taking of phosphorus for the purpose of producing abortion. Of these cases three recovered after operation, while two died.—*A leading article in the Journal of the American Medical Association, July* 15, 1899.

## 89.—PYLORECTOMY AND GASTRO-ENTEROSTOMY.

[The following is taken from Dr. Charles L. Gibson's abstract of Dr. Steubel's paper (*Beitrage z. klin. Chir. Bd. xxiii.*) on the Results of Stomach Operations in Czerny's Heidelberg Clinic.]

*Pylorectomy.*—Eight recent cases,—carcinoma seven, sarcoma one. Three died as a direct result of the operation, and three—four, six, and eleven months respectively—after operation. The last two cases are still alive (nine months). Kocher's method—suture of the stomach and implantation of the duodenum in the posterior wall—was performed four times. In three cases a posterior gastro-enterostomy with the Murphy button was first done, and then followed resection of the pylorus, closing the free ends of the stomach and duodenum,—the operation was done once in two stages. In the remaining cases, pylorectomy and closure of the free ends was first accomplished and then an anterior gastro-enterostomy with the Murphy button performed. No one method seems to present any special advantages, although the saving of some fifteen minutes' time attending the use of the Murphy button is not to be undervalued. There is a feeling of marked security in beginning by performing a posterior gastro-enterostomy, as the pylorectomy may then be abandoned, if necessary, or if it be found advantageous to reserve its performance for another sitting. It is only necessary to locate the opening at a proper distance from the pylorus, a rule that holds good in general for the performance of gastro-enterostomy for malignant disease. If the button is used, there will be no danger of tearing apart the edges of the new opening. Posterior gastro-enterostomy with the Murphy button, followed by pylorectomy, is the quickest operation and attended with the least technical difficulties. Kocher's operation is very difficult, owing to the depth of the wound one has to work in, but it seems to promise the best functional results, as it more nearly complies with the normal conditions. The three cases that lived made an extremely smooth convalescence. Czerny has not always been able to carry out his proposed plan of doing his pylorectomies hereafter in two sittings, beginning with the gastro-enterostomy. When this plan is put into effect, an interval of at least three weeks should intervene; but, on the other hand, one cannot afford to let a malignant tumour grow too long. The second operation is rendered more difficult, owing to adhesions, and whenever possible the entire procedure is best completed in one sitting.

Counting in the old cases, the record of the clinic is twenty-four pylorectomies for carcinoma and sarcoma. Nine died as a direct sequel of the operation. In others life was prolonged—three months one, seven months four, and for nine, ten, eleven, fifteen, twenty, and thirty-one months each one case. Four are living, nine and eleven months, three and one-half and seven years after operation. The operation was also performed five times for non-malignant stricture; one case has remained well now fifteen years. Since October, 1889, the operation for this class of cases has been replaced by pyloroplasty or gastro-enterostomy. The average duration of life in the twenty-four operations for malignant disease is eleven months; excluding the cases dying as a direct result of operation, the prolongation of life averages twenty-two months. There is, however, a direct operative mortality of 37 per cent. The proportion of pylorectomies performed has increased steadily, though, perhaps, not to that extent that operations on the stomach have increased in the clinic,—1891-1892,—eleven operations; in the last five years, thirteen. The mortality has, however, not diminished, as for the two periods mentioned it was respectively 36·4 and 38·5. In estimating the probabilities of lessening the death-rate and of obtaining more permanent cures one must believe that the surgeon's resources are practically exhausted, and the problem must be solved by medical men in making earlier diagnoses and supplying a less exhausted class of subjects for operation.

*Gastro-Enterostomy.*—Sixty-five recent cases. The operation was performed forty-seven times for malignant disease, fifteen times for non-malignant stricture, and three times for simple fresh ulcer. There were twenty deaths (within the first thirty days),—30·8 per cent.; in malignant disease, 38·3 per cent.; in other conditions 11 per cent. As a cause of death, pneumonia is greatly in evidence, occurring fifteen times, a proportion differing widely from the experience of other operators. The frequency cannot be ascribed to the anæsthetic,—ether was rarely used,—and in five cases operated under local anæsthesia, two developed pneumonia. The season of the year can also not apparently be held responsible. Most of these patients will be found to present some pulmonary disturbances, such as bronchitis, emphysema, &c., conditions which are easily aggravated by an anæsthetic, recumbent posture, and compression by the abdominal dressing. Moreover, the epigastric incision increases the difficulty, interfering with respiration more than does the subumbilical. It is noteworthy that relatively more men die from pneumonia, as in the male, the breathing being essentially of the abdominal type, the embarrassment is greatest. It is doubtful if letting the patients up at an early period, as practised in some clinics, prevents the pneumonic process, as its onset generally occurs in the forty-eight hours following operation.

Only one case died of regurgitation of intestinal contents, and here the conditions were complicated by a free hemorrhage from the ulcerating carcinoma. Among these sixty-five cases, a secondary anastomosis (good result) was only performed once. In the experience of this clinic it never seemed in order to combine the gastro-enterostomy with a primary entero-anastomosis. The infrequency of regurgitation is probably due to the employment, whenever possible, of von Hacker's operation, care being taken, in making the attachment of the jejunum, not to subject it to any tension, and that the peristaltic harmony of direction was maintained. Another element favouring the prevention of regurgitation is to be found in the use of the Murphy button, which certainly, at first, precludes the formation of a spur. Twelve of the anastomoses were made with sutures, the rest with the button, which since 1896 has been employed exclusively. It is of immense advantage in malignant disease in diminishing the duration of operation and allowing of early nourishment. On several occasions the button was supposed not to have been passed, but could not be found on re-opening the abdomen or at autopsy. Although, in a considerable number of cases, it was plainly evident that the button had not escaped, yet in no instance did its continued presence do any damage. Since the use of the button has become established technical difficulties attending the operation have disappeared. There was never any trouble in bringing the two halves together.

The results of treatment of fresh round ulcer, characterised by severe hemorrhage, were most gratifying, and it would appear that the affection is manifestly benefited by this operation, and that, as a rule, all symptoms are relieved. (The experience of others also confirms this view). Owing to the unobstructed escape of gastric contents hyperacidity is impossible, and the exciting cause disappears. From a practical stand-point, then, one should not waste much time in looking for an ulcer, as gastro-enterostomy with its much simpler technique better accomplishes the purpose than does an excision of the ulcer. Counting previous cases, the total number of gastro-enterostomies is 110, with thirty-three deaths, or 30 per cent. mortality; eighty-two were for malignant disease, with twenty-nine deaths, 34·5 per cent.; non-malignant, twenty-eight, with four deaths, or 14·3 per cent. These figures show better results than given in Chlumsky's large statistics, where the figures stand as 38·5 per cent. to 21·4 per cent.

The field of gastro-enterostomy has been extended by its substitution for resection of non-malignant stricture, and by its recent application for the relief of simple fresh ulcer. The operation is now more frequently performed, owing to its improved technique, especially in the saving of time with the use of the Murphy button. The mortality with the button, 24·5 per cent., compares favourably with the 36·8 per cent. of the suture method. Von Hacker's method was employed ninety-six times; Wölfler's, fourteen times; but a comparison of their results would not be just, as the latter operation was employed only in severer cases, when the former was not possible. The duration of life after gastro-enterostomy for cancer averaged 12·6 months. Some patients are alive as long as four and one-half, five, and five and one-half years. Subtracting, however, four cases of prolongation of life incompatible with the diagnosis, the average is 7·8 months. Of the twenty-eight anastomoses for non-malignant conditions, twenty-three are still living. The gain in weight of these individuals ranges from eighteen to forty-five pounds. The dilatation of the stomach had usually not quite disappeared when re-examined. The motor function was good, in fact, the stomach was usually found to have emptied itself quicker than normally. The total acidity, as well as the free hydrochloric acidity, was constantly under the normal; indeed, the hydrochloric acid was for the most part absent. Comparisons of the permanent qualities of the openings made with the Murphy button or by suture in non-malignant cases are not yet in order, but it is already evident that, in some cases, the use of the button is followed by a considerable degree of contraction.—*Annals of Surgery, June*, 1899.

## 90.—OPERATIVE TREATMENT FOR CANCER OF THE STOMACH.

By Professor Maydl.

The author has published the results of twenty-five operations which he has performed for cancer of the stomach. Since the days of Prof. Billroth these have been subjected to severe criticism, condemnation and praise alternating. Prof. Maydl divides the twenty-five cases into three classes for the sake of comparison. The first comprises cases in which the patient died from the effects of the operation either directly or indirectly; these were four in number. The second group includes those dismissed from hospital as cured, but in which within a short period thereafter a recurrence of the disease took place, and death ensued; these were seven in number. The third group, which is the most important, comprising fourteen cases, included those cases in which the patients still live. This section he divides into two sub-sections, (*a*) living upwards of two years since operation; (*b*) those alive less than two years after the operation.

Of the first group four died, one from a sudden attack of gangrene in the right lower extremity, probably embolic from the tying of a vein, but this could not be confirmed, being a private patient and the friends declining to consent to a post-mortem examination. The other three died in two, three, and five days respectively, after the operation from peritoneal symptoms, collapse with anæmia and exhaustion. The second class left hospital in good health, and apparently cured, but ere long took ill with a recurrence somewhere else, and died. One of the seven may be looked upon as doubtful. This patient lived fourteen months after the operation, and died of pleurisy with effusion, every other organ being found healthy at the post-mortem. Even the appetite was unimpaired up to the very end, and no disease could be discovered in or near the stomach. The other six cases lived 12 months, 8 months, 2 months, 20 months, 14 months, and 12 months respectively after the operation, or an average of 11·3 months. Of the third class, fourteen are still alive. These were operated on:—

August 27, 1890.
June 7, 1893.
January 27, 1895.
March 1, 1896.
March 20, 1896.
February 20, 1897.
March 27, 1897.
January 30, 1898.
October 29, 1898.
October 31, 1898.
November 3, 1898.
December 21, 1898.
January 4, 1899.
March 25, 1899.

If these be further sub-divided into two groups of over two years and under, we get the patient who may be considered cured in the surgical sense of the term. Seven may be classed thus:—

| | |
|---|---|
| 8 years | 8½ months |
| 5 ,, | 11 ,, |
| 4 ,, | 3½ ,, |
| 3 ,, | 2 ,, |
| 3 years | 1½ months. |
| 2 ,, | 2½ ,, |
| 2 ,, | 1½ ,, |

In considering the percentages of the different authors, the above figures give 16 per cent. as the proportion of those who die from the operation; in 28 per cent. the disease recurs; while 56 per cent. still live. It may still be remembered that C. Ewald, of Berlin, condemned this operation on account of the mortality, he having had 73·3 per cent., which was certainly not encouraging; but these results far exceeded those obtained by the pioneer of the operation, Billroth, who had a mortality of only 45 per cent. Billroth's pupil, Mikulicz, reduced this mortality to 32 per cent., while other operators, Kronlein, for example, had only 25 per cent., Carl and Fantino, 21·5 per cent., and now Maydl's mortality stands at 16 per cent.—*The Medical Press and Circular, October* 11, 1899.

## 91.—THE TREATMENT OF INGUINAL HERNIA IN INFANCY AND CHILDHOOD.

By JOHN LANGTON, F.R.C.S.,
Surgeon to St. Bartholomew's Hospital, London.

Mr. Langton limited his remarks to cases occurring in children under the age of 10 years. Femoral hernia was comparatively rare in young children, amounting to not more than 3 per cent. in all cases. No statistics were known to him, showing the proportion of ruptured infants to healthy infants, nor as to the influence of race, but he believed that Jewish children were more liable to the condition than others. Boys were well known to be more liable than girls. Hernia is more common on the right side, and this has been shown to be associated with the fact that the vaginal process on the right side is nearly always open at the time of birth, while on the left side it is nearly always closed. It is often difficult in young children, to say whether the hernia is in the tunica vaginalis, as the rupture seldom descends so low as to envelop the testis. The fact of the patient being born ruptured does not prove that the hernia is in the tunica vaginalis. In infancy, diagnosis is easier than in later life. Malposition of the intestine in early life does not often lead to dfficulty.

Treatment may be considered as (1) preventive, (2) instrumental, (3) operative. The treatment must be also varied if unbilical hernia is also present, as it is in 21 per cent. of all cases. (1) As to preventive treatment, proper dietary was of great importance. Improper feeding leads to chronic intestinal irritation, distension of the intestine, and consequent increased pressure on the abdominal wall, so that the girth of the coil of the umbilicus may be very considerably increased. Circumcision is often recommended as a mode of preventive treatment, but in the speaker's opinion, phimosis did not play a very important part in the production of hernia, and this opinion was in accordance with the fact that Jewish children are particularly liable to hernia. The operation itself is attended by pain, and the dressing is accompanied by crying and straining. Phimosis and hernia are not found in practice to be necessarily associated. Micturition is not due to the sole action of the abdominal muscles, but largely to the intrinsic muscles of the bladder. Muscular exercise, tending to strengthen the abdominal muscles, is important as a prophylactic, and can be carried out in children above three years of age.

(2) *Instrumental*, by means of a truss or the wool bandage. If treatment is begun as soon as the condition is recognised, operative influence will seldom be required. The skein wool plan is now very largely used, both in hospital and private practice. The speaker had tried it very extensively, and believed the results were not satisfactory. In fact, failure might be safely predicted, owing to displacement of the knot, its dirtiness, and the loss of elasticity in the wool. He had therefore quite given up its use. For the proper measurement and adjustment of a truss, experience counts for much, but the number of cases in which a properly fitting truss failed to retain the hernia might be counted on one's fingers. The truss must fit properly, be covered with rubber, and be worn night and day. If the patient is properly looked after, excoriation of the skin did not occur. The results in private practice are habitually better than those of hospital practice. As to the time the truss should be worn. If begun before the age of one year, it should not be discarded before the age of three; if not before the age of three, it should be worn till the age of seven; if not applied till seven, it should be worn at least till puberty. The prospect of permanent cure is encouraging, and more so the younger the child when the treatment is begun. If an unbilical hernia is present also, the inguinal hernia should be tested first.

(3) *Operation.*—Indications for operation are not often present. The conditions also are not very suitable, the cause being hardly found, and the tissues being too soft. No operation should be advised prior to the age of five or six, except in unusual cases. In such cases the speaker used a ligature of kangaroo tendon, which resists absorption for three or four months. Silk may cause suppuration even after three or four weeks. Operation is indicated in the following cases:—(*a*) Irreducible omentum; (*b*) irreducible omentum, with fluid in the sac; (*c*) congenital hydrocele; (*d*) strangulated hernia; (*e*) all cases of fluid in the sac of the hernia; (*f*) when it is found impossible to retain the hernia mechanically; (*g*) when proper treatment is impossible, on account of the incompetence of the mother; (*h*) when a truss has been worn for three or four years without benefit.

To sum up: (1) Hernia, if properly treated, is curable; (2) if a family history of rupture is present, preventive measures should be resorted to as early as possible; (3) there is no evidence that circumcision either prevents or cures; (4) operation is rarely needed; (5) the age is ill-suited for operative interference, and, if properly treated otherwise, cure usually takes place.—*Report of Mr. Langton's paper before the British Medical Association, Pediatrics, October* 1, 1899.

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## 92.—SOME UNUSUAL CASES OF HERNIA.

By J. Basil Hall, M.C. Cantab., F.R.C.S. E.,
Visiting Surgeon to the Bradford Union Hospital.

[The details of the cases are omitted here. All the cases recovered after operation.]

The following cases of hernia, which I have been called upon to treat during the past few months, possess some peculiar features which render them worthy of a brief record. The first case I quote is interesting on account of the cæcum and appendix being found in a left hernial sac. Of 112 cases of sacs containing the appendix collected by Baiardi and Briancon, the hernia was on the left side in only two instances. In the absence of transposition of the viscera, the condition is only possible in the presence of a meso-colon. In this case the cæcum and right colon had apparently retained their primitive fœtal arrangement, there being in fact a floating cæcum and ascending colon supported by a mesentery common to themselves and the small intestine. This condition is described and figured by Lockwood, but the instance he gives was not associated with any hernial protrusion. My second case is an example of hernia through Petit's triangle of traumatic origin in a young man aged 19 years. Hernia following contusion of the abdominal wall is sometimes spoken of as "Guthrie's hernia," as it was first described by that surgeon shortly after the Peninsular war, under the name of "traumautic hernia." Hernia, when occurring in Petit's triangle, rarely passes through the triangle itself, but usually, as in this case, protrudes through the lower fibres of the latissimus dorsi. It seems somewhat remarkable that hernia does not occur more frequently at this site, the weakness of the wall here being very evident on turning up the lower border of this muscle.

My next case, one of Richter's hernia, in a man aged 57 years, is interesting from a clinical as well as a pathological point of view, being illustrative of the great value of local anæsthetics under certain conditions. Hernia of a portion of the bowel wall or partial enterocele seems to have been first described by Littré in 1714, when he met with a portion of colon wall strangulated in the neck of the sac. Littré's name, however, has been associated more properly with hernia of a diverticulum, while Richter fully described, in 1778, partial enterocele, which is now known as Richter's hernia. A most complete account has been written in recent times by Treves of this peculiar condition. This form of hernia is interesting on account of its comparative rarity, the difficulty in its diagnosis and its consequently high death-rate. Treves, in 1887, collected the reported cases, fifty-three in number. In half of these the condition was not recognised, and all these patients died. In more than half the remainder herniotomy was fatal on account of the operation being undertaken too late. The symptoms of strangulation being little marked and diarrhœa rather than constipation being the rule, operation is deferred. The vomiting is not severe, and any tumour is small or absent. On the other hand, with these difficulties in diagnosis, sloughing and gangrene leading to extravasation occur remarkably early in this form of hernia. Treves gives the mortality after herniotomy at 62 per cent. in these cases. Under ordinary circumstances it is difficult to understand how such a limited portion of the bowel wall can become incarcerated in the neck of the sac. In this case it seems that the bowel, forced downwards during a fit of coughing, failed to enter the sac already filled with ascitic fluid, only a small portion of the gut wall being caught in the ring. In connection with this case I would emphasise two points: first, the importance of early exploration of any pre-existing hernial sac in any case exhibiting symptoms of obstruction, even in the absence of any swelling at the hernial site. Such a procedure may save the patient a laparotomy, whilst under any circumstances it can do no harm. The second point I would emphasise is the value of cocaine, or, better still, "eucaine," in performing operations where a general anæsthetic is undesirable. It seems to me that these local anæsthetics have never received the recognition they deserve. As Casualty-Officer at Leeds I had the opportunity of testing the value of cocaine as a local anæsthetic to a very large extent, and can speak highly of its usefulness. I have opened the abdomen under cocaine, and operated upon hernia and empyema with satisfactory results. Recently I dissected out a traumatic aneurism of the radial without causing any severe pain. By giving small doses during the operation, whenever a non-anæsthetic part is reached, a large area of tissue may be operated upon with a comparatively small dose of the drug. In the case under discussion pain was was only severe, first when dividing the neck of the sac, and secondly in placing the ligature round it. When given gradually in the manner indicated, the drug does not produce the dangerous syncope sometimes seen after the administration of a whole dose in one single injection. I have always used a 10 per cent. solution, and limited the quantity injected to five or ten minims.

The last case I desire to mention is one of umbilical hernia in a woman aged 73 years. Strangulated umbilical hernia has a high mortality under any circumstances; and, to the best of my recollection, this is the greatest age at which I have seen herniotomy followed by recovery. Fæcal obstruction is only rarely fatal, but an attack of eight weeks' duration, associated with strangulated umbilical hernia, seems a very severe ordeal to survive at the age of seventy-three.—*Quarterly Medical Journal, November*, 1899.

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## 93.—TREATMENT OF ACUTE INTUSSUSCEPTION IN INFANTS.

By H. Stansfield Collier, F.R.C.S. Eng.,
Assistant Surgeon to the Hospital for Sick Children.

[An abstract of a clinical lecture :]

In the short time which is at our disposal it is impossible to discuss more than a very small part of the subject of intussusception. I propose to limit my remarks to details of the treatment of this trouble occurring in very young children. As you know, intussusception is relatively common in infants who are still in arms, and while in older children surgeons are fairly agreed upon the propriety of treatment by abdominal section in most cases, there is no unanimity as to the course to be followed in dealing with very young children. Before considering any methods of reducing intussusception it may be emphasised that the most powerful cause of the high mortality which attends every kind of treatment is failure in recognising sufficiently early the nature of the case. Failure in making an early diagnosis is sometimes due to intrinsic difficulties; at other times paroxysmal pain and vomiting are assumed to be the results of indigestion, and an incomplete examination of the child is made; and among the hospital patients it is most often found that the mother refers the child's symptoms to flatulence and is not alarmed sufficiently to send for a medical man until the child's condition appears serious. It is well to remember that in the early hours of intussusception the infant usually has a lusty cry and does not look very ill. A pinched shrunken face and evidence of marked vital depression are not the rule before the second day. Paroxysmal abdominal pain, whether the infant looks seriously ill or not, should always raise the question of intussusception.

*Treatment by Rectal Injection.*—This naturally appeals to us as we regard the tender victim, but the horrible uncertainty in which we are likely to find ourselves at the end of the endeavour robs us of all comfort in carrying out this measure. I need hardly remind you that if you inject air or water by a Higginson's syringe you cannot easily measure the pressure you employ, and for this reason it is preferable to use a tube and funnel, taking care that the surface of the fluid in the funnel is not raised to a greater height than two feet above the level of the child's abdomen. Chloroform should, I think, always be given. Injection of air and of water at the same sitting is a very ancient method of treating intestinal obstruction, and in Adam's translation of Hippocrates, in one of the spurious treatises, one reads: "In treating ileus when a clyster fails to relieve the bowels they are to be inflated by means of a bladder attached to a pipe, and then the pipe is to be removed and a clyster immediately injected, in which case if the bowels admit the clyster they will be opened and the patient will recover, but if otherwise he will die," &c. As applied to intussusception we cannot find fault with this time-honoured treatment or with the prognosis. At the close of an apparently successful attempt a careful search should be made by bimanual examination for unreduced bowel. In making the bimanual examination, as you pass the index finger into the rectum, do not flex the other fingers, or the knuckles will come in contact with the bony outlet of the pelvis and diminish the reach of the examining finger. The fingers should be held in such a manner that the sacrum and coccyx lie in the cleft between the index and middle digit. But neither a negative result of bimanual examination nor temporary respite from pain and vomiting affords assurance of success. Dr. J. D. Mortimer in his often-quoted paper writes: "There is also afterwards a deceptive lull, lasting some hours, due to the effects of shock, anæsthetic, and cessation of feeding, as well as the opium usually given. Such delay may so alter the general and local conditions as to render hopeless any further proceedings." It is probable that many cases which have been thought to be recurrences of intussusception have been examples of incomplete reduction. I have not heard of recurrence following reduction through an incision. My experience of treatment by rectal injection alone has been very disheartening. Of five cases I saved only one, and while in the other four the tumour disappeared and for a time each child appeared to be relieved, there was subsequent proof that the reduction had not been complete.

The most recent statistics which I have seen are those of Wiggin, who found that of 72 cases treated by rectal injection of air or of water there were 54 failures and a mortality of 75 per cent.

*Treatment by Abdominal Section.*—It cannot be denied that infants support abdominal section very badly; exposure and manipulation of the peritoneum produce in them a great degree of shock. I dare say that you have all seen cases in which everything went well during the operation, but in which death occurred a few hours later from heart failure, perhaps attended by all the phenomena of collapse, perhaps by high fever. It is most important, however, to distinguish cases in which a free abdominal incision is made and in which much exposure and manipulation of bowel may be required, with perhaps a prolonged stay upon the table, from those cases in which reduction can be effected through a very limited incision with little or no exposure and with rapid completion. It is abdominal section *à ciel ouvert* which is so dangerous on account of shock. The method of reduction through a small incision should not have a greater mortality than the operation for strangulated hernia in children of the same age.

*Treatment by the Combined Method.*—[The author gives details of three cases thus treated, all of which recovered. Water or air is injected, and then a very small incision is made over the intussusception, and the bowel reduced by introducing one finger only.]—*The Lancet, August* 26, 1899.

## 94.—NON-MALIGNANT STRICTURES OF RECTUM. THEIR SURGICAL TREATMENT.

By Dr. JOSEPH B. BACON, Chicago.

[From Dr. Bacon's paper:]

Gradual dilatation by bougies is a very old method, dating back as far as we have a history of surgery; but there is no authenticated record of its ever having been a means of cure in a true cicatricial stricture, while it has a record of producing an enormous death-rate from perforating the bowel or increasing the ulcerations and prolonging the septic absorption until the patient succumbs to amyloid visceral changes. Divulsion or forced dilatation of rectal strictures, with or without anæsthesia, although a common practice of years gone by, produced such an alarming death-rate with no permanent authenticated results that it seems unnecessary to speak of the method at this age of common-sense and advanced surgical pathology. This method of treatment is never justifiable under any circumstances, except when the stricture is confined to a circular scar of the mucous membrane. In these cases, if the ring of cicatricial tissue is broken, a bridge of mucous tissue will sometimes form between the severed ends, and thus prevent the re-formation of a stricture.

Proctotomy for the relief of stricture has been practised by surgeons since very remote times, probably dating almost as far back as the use of the bougie. It has been described and classified under the terms of internal and complete proctotomy. Internal proctotomy consisted in making one or more incisions from within the rectum through the stricture. These incisions give but temporary relief, and the absurdity of making a wound in a septic field, with no chance for providing free drainage, has been abundantly illustrated by the enormous death-rate even in the reported cases. Except as a rare procedure for extreme emergency, where otherwise death from obstruction is imminent, this operation should be relegated to the archives of ancient history. In complete proctotomy the incision made through the stricture and all the tissues including the anal canal, the sphincter muscles, and everything back to the sacrum and coccyx, giving a free drainage, and the relief from obstruction is temporarily complete. The free, open drainage makes the operation comparatively free from danger. But the wound gradually heals by granulation, and eventually this extra scar tissue is added to the previous stricture tissue, and the constriction is worse than before any operation was performed. The exceptions to this are very rare indeed. But worst of all is the almost universal fæcal incontinence following this operation.

After aseptic surgery became a fact, the surgeons were very greatly encouraged over the possibility of resecting the stricture tissue and reuniting the gut by end-to-end anastomosis, but this fond hope was blasted after the statistics of a few years' work were published. The deaths from peritonitis, from one or more or even all the sutures giving way from the tension, from peristalsis of the gut or more often by the tension caused from the gut sufficiently to draw it well down in the lower pelvis, gave a discouraging mortality. The few cases that escaped death, with rare exceptions, found after one or two years that a stricture had re-formed at the seat of anastomosis. More recently, Howard Kelly and others have amputated the rectum just above the stricture, inverted the cut end of the rectum by suturing, and anastomosed the proximal end of the sigmoid into the rectum below the stricture. The same reason that caused the failure of end-to-end anastomosis of the rectum will operate to make the lateral anastomosis fail. Naturally, after the surgical operations for the relief from rectal strictures had failed to give any encouragement to the surgeons, they began falling back upon the last resort for saving life and professional reputation, and inguinal colotomy was recommended as being sure of relief from obstruction and from the danger of perforation at the seat of ulceration above the stricture.

I have devised and advocated two operations: one for strictures located at or above the junction of the levator ani muscles of the rectum, and one for that class of strictures located below the levator ani muscles. For a stricture of the first class a laparotomy is made in the median line from pubis to umbilicus with the patient in the Trendelenburg posture. The sigmoid flexure is now seized and enough of it selected to bend down over the stricture and anastomose the sigmoid with the rectum below the stricture, either by sutures or a small Murphy button. In doing this two peritoneal surfaces are brought in apposition from the point of anastomosis. The abdomen is now closed as in an ordinary laparotomy and the drainage-tube remains from forty-eight to seventy-two hours, according to conditions. The button will come away in about a week, leaving a small fistulous opening between the sigmoid and rectum below the stricture. We have now only to clamp the whole or part of the septum from time to time until the stricture is severed. The severed ends can never unite, because a plastic operation is completed, with the sigmoid uniting the severed ends of the stricture. To do this I use a clamp forceps with a lock similar to an obstetric forceps, inserting one blade through the anus and into the sigmoid through the buttonhole, and the other blade through the stricture along the rectal wall. The forceps are now locked and a rubber ring drawn over the handle so as to clamp the septum gradually for two days; then the handles are firmly compressed as an ordinary catch forceps and left to produce pressure atrophy of the septum until they completely sever it. For that class of strictures located below the levator ani muscles, I produce a mucous fistula posterior to the stricture, so that when finally at a second operation the stricture is severed, this mucous tract lies between the severed ends of the stricture tissue, and prevents scar tissue forming to reunite them and re-form the stricture. This is done by taking a blunt-pointed aneurysmal needle threaded with heavy braided silk. The needle is pressed within the anal canal just above the internal sphincter muscle: the point of the needle is forced through the rectal wall back to the coccyx and then carried up posterior to all stricture tissue above the stricture, when the needle is again forced into the rectum. With a blunt hook passed through the stricture, the thread is now caught at the eye of the needle and drawn down. The needle is withdrawn and the suture loosely tied so as to form a seton surrounding the stricture tissue. The heavy thread gives free drainage, and none of the cases have had any symptoms of infection. This thread is left in place for three months, during which time the bowel is washed twice daily with boracic acid solution. If the stricture is very tight I make a superficial incision on its anterior surface, just cutting the inner circle of scar and avoiding cutting the rectal wall, as a temporary relief from constipation. After three months the patient is put under anæsthesia, the sutures removed and a grooved director passed along the fistulous tract. I now take a Paquelin cautery and sever the stricture down on the probe. I have performed this operation with perfect success in a number of cases.—*Journal of the American Medical Association, September* 16, 1899.

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## 95.—TREATMENT OF ACUTE GENERAL SEPTIC PERITONITIS.

By Sir WILLIAM MITCHELL BANKS, Liverpool.

As regards what we should do when we have opened the abdomen in a case of suppurative peritonitis, the thing is, of course, to wash the peritoneum out and cleanse the bowels. May I make a suggestion? I have been wondering whether, in the case of a child at any rate (and the majority of such cases occur in children), it would not be possible to import into the operating-theatre a tin bath, and place it on a couple of stools beside the table, at a height convenient to the surgeon. Let it be filled with a hot salt solution, and let the child be put into this, and have the abdomen opened in it, and, in short, let it be washed out under water. The reviving effect of hot water, when poured into the abdomen, upon a sinking patient is always very apparent, and it has occurred to me whether the immersion of the whole body might not help in maintaining the spark of life, while enabling the abdomen to be rapidly washed out. It is a mere theoretical proposition, but perhaps it may yet be tried.

The next point which attracts the surgeon's attention is the question of the *origo mali*, and whether anything can be done for that. As we have just seen, the probabilities will always be in favour of appendicitis as the primary cause, and under these circumstances one will naturally turn to the right iliac fossa. Here Mr. Murray was fortunate enough to find a sloughing appendix ready to hand, so to speak. Time being the great desideratum in these cases, I would suggest that, if ease of execution and rapidity are to be gained, the median incision should be promptly enlarged by a cross cut in the direction of the cæcum. Cross cutting of the abdominal wall, so far from being a thing to be avoided, is much to be approved of. Cross cuts heal easily, and do not weaken the wall subsequently. A rapid slash to gain room and good vision is far better than losing time by poking about in the dark. The next trouble that awaits the operator is when he comes to return the intestines. It is sometimes impossible to do this. The more you push them in at one corner, the more they tumble out at the other. The great point is rapid decision. Let a rapid but fair trial be given, but do not lose time. If it seems reasonably clear that a return cannot be effected, the only thing to be done, so far as I know, is to open the intestine at its most distended part, and tie in a glass tube. Through this, flatus and fluid fæces can be squeezed sufficiently to let the bowels be returned. The tube, of course, lies out through the wound.

But, after all, with the very best surgical skill, success cannot be commanded. One cannot make bricks without straw, and one cannot do serious operations without vitality on the part of the patient. All patients who have reached the climix of a septic suppurating peritonitis are more dead than alive. Some surgeons never realise this matter of vitality. The mechanical part of an abdominal operation fascinates them; and so long as no insuperable anatomical difficulties present themselves, they seem to regard all persons as very much the same. They adduce the prolonged operations involved in the removal of uterine or ovarian tumours as examples of what patience will do. They entirely forget the difference between a patient who is dying from poison and one who is not. The fatality in operating upon the cases under consideration is not so much due to technical difficulties as to the condition of the patient. It will ever remain so. The corollary is this: that speed and rapidity of operating are all-important. Every minute is of consequence. Moreover, contingencies must be thought over, so as to be promptly met without loss of time.—*From Sir William Bank's paper in the Liverpool Medico-Chirurgical Journal, July*, 1899.

## 96.—SUCCESSFUL RESECTION OF CARCINOMA OF THE LIVER.

By W. W. Keen, M.D.,

Professor of the Principles of Surgery, the Jeffreson Medical College.

The author (*Ann. of Surgery*, September, 1899), has reported the case of a man, aged 50 years, who for three months complained of dull pain in the abdomen just below the umbilicus and also in the epigastrium. The pain was moderately severe, and for a time transient, but subsequently it became almost constant. It was of a dull, grinding character, and it increased after meals. The appetite had been poor for two months. There was, however, no nausea or vomiting. The bowels were moved daily, and the stools were normal. The man had previously weighed two hundred and thirty-five pounds, but he had been reduced to two hundred and five. He was weak, and had been incapacitated from work for ten weeks. On uncovering the abdomen the epigastrium was seen to bulge forward in a uniformly rounded swelling. The elevation above what would be the normal contour of the abdomen was 2 or 3 cm. in size. Palpation disclosed a hard, firm, movable mass, the size of a large hand, entirely filling the epigastric region, and extending to the level of the umbilicus. Over this the percussion note was dull, and the dulness was continuous with that of the liver. With the gastrodiaphane the epigastrium appeared absolutely opaque. Hydrochloric acid was found in normal proportion in the gastric juice obtained after a test meal. There had never been jaundice or other hepatic derangement, and no disturbance of the bowels. An exploratory operation was advised and consented to. As soon as the abdomen was opened in the middle line it became clear that the tumour was hepatic, and when it was drawn outside of the abdomen a number of large nodules were found occupying the entire left lobe of the liver. Palpation failed to disclose other nodules or involvement of the lymphatic glands. As it seemed possible to remove the entire left lobe of the liver, and with it the whole of the tumour, extirpation was at once proceeded with, the operation being performed entirely with the Paquelin cautery. From twenty to thirty minutes were required to sever the left lobe from the remainder of the liver. The hemorrhage was not excessive, except when some of the larger veins were burnt into. Each of these when opened was instantly closed with the left forefinger ; then, with the cautery temporarily laid aside, a catgut ligature was passed under each by means of a Hagedorn needle, and an assistant tied it slowly but firmly. Five ligatures were thus applied. Three of the veins required ligature of both of the divided ends. The hemorrhage, except from these large veins, was arrested by the Paquelin cautery ; however, occasionally, when the cautery was laid aside to apply the ligature, temporary packing with iodoform gauze proved of great service in arresting the parenchymatous hemorrhage. The amount of blood lost was estimated at eight or ten ounces, but as a severe loss was feared before the end of the operation, an intravenous saline injection, one quart, was made at the beginning of the hepatic portion of the operation. The surrounding tissues were well protected against the cautery by wet aseptic gauze pads. When the tumour was removed it was found possible to obliterate a part of the resulting raw surface by folding the edge of the liver upon itself like the flap of an amputation, the cautery incision having been made obliquely. A few catgut stitches approximated these flaps, but there was still left over one-half of the burnt surface exposed in the peritoneal cavity. To prevent hemorrhage or subsequent adhesions, as well as to provide against the escape of bile into the peritoneal cavity, iodoform gauze was packed against the liver, the end protruding through the abdominal wound. The abdominal cavity was then carefully flushed out with salt solution, though but few clots were thus removed, and the abdominal wound was closed excepting at the point where the gauze packing protruded. The tumour measured five and one-half inches long, four and one-quarter inches wide, and three inches thick. Its circumference was eleven by thirteen and one-eighth inches in the two directions. The raw surface left where the tumour had been detached from the liver was five and one-half inches by two and three-eighths inches. The weight of the tumour was twenty-one ounces. The post-operative history was uncomplicated ; with the exception of vomiting, which continued for nearly forty-eight hours, and hiccough on the second day, nothing of special note occurred. Ice, champagne, doses of cocaine, gr. $\frac{1}{40}$, and similar doses of carbolic acid had no effect on the vomiting. At the end of forty-eight hours, after lavage, both the vomiting and the hiccough ceased entirely. The temperature scarcely rose above the normal. The gauze packing was removed at the end of forty-eight hours. It was stained in streaks with bile. By the fourth day the discharge of bile through the opening left by the removal of the gauze was quite free, amounting to perhaps three or four ounces in twenty-four hours. This gradually diminished, and ceased by the twelfth day, a little serous discharge then taking its place ; but this became slightly purulent after two weeks. After a month the wound was entirely well except for a small shallow sinus, which promised to close, and the patient was out of bed. Histological examination disclosed the tumour to be a carcinoma. —*Medical Record, October* 7, 1899.

## 97.—PANCREATIC CYSTS.

By Robert Abbe, M.D.

Dr. Abbe presented drawings and histories of three cases, remarking that they illustrated well the relation of the stomach and colon to the cyst. It had been shown by Körte that these relations were not at all constant. In Fig. 2, shown by Dr. Abbe, the stomach was below the cyst, in Fig. 3 above it, and in Fig. 4 upon it. A knowledge of this wide variation was valuable, and aided much in making the diagnosis in two of his cases. It occurred rarely that the colon lay upon or even above the major part of these cysts. In the three cases narrated, a prompt and radical cure was effected by drainage.

*Case* 1.—The patient was a woman who was referred to Dr. Abbe in July, 1898, by Dr. Bogardus. She had previously been operated on by a surgeon in a neighbouring city, who, upon opening the abdomen, found a large tumour, which he regarded as a cancer of the stomach and pronounced it inoperable. Dr. Abbe performed a second laporotomy, and found a large pancreatic cyst lying behind and above the stomach; it was filled with a clear fluid and its walls were everywhere lined by shreddy tissue, semi-necrotic in character, and mixed with much calcareous matter in cakes and rough pieces. The cyst was cleaned and drained, and the patient made an excellent recovery.

*Case* 2.—The patient was a woman, who gave a long-standing history of stomach trouble. More recently she complained of acute pain, intermittent in character, and the presence of an epigastric tumour, which occasionally grew smaller and then enlarged again. At times she vomited a dark, clear fluid and had bloody dejections, followed by clay stools for a day or two. Examination showed an oval tumour, like a greatly distended gall-bladder, extending from the tenth cartilage to the navel. The pylorus and stomach were raised on the upper part of the tumour, along the edge of the ribs. The patient was operated on by Dr. Abbe on September 6, 1898. A pancreatic cyst, filled with coffee-coloured fluid, was found; it also contained a number of small-sized calculi. The cyst drained for some time, the sinus finally closing in December, 1898. The patient made a good recovery.

*Case* 3.—The patient was a woman, 32 years of age, who for eight months had suffered from pain in the back, with vomiting. No jaundice. Soon afterward an abdominal tumour was noticed. The vomiting gradually passed off, and there were no other digestive symptoms. The tumour gradually increased in size, however, and gave rise to much discomfort and some difficulty in breathing. It was oblong and spherical, extending into both lumbar spaces. The patient was operated on by Dr. Abbe on April 7, 1899. He found, as he had expected, a pancreatic cyst, which contained about half-a-gallon of a clear, coffee-coloured fluid, the specific gravity of which was 1,016; it was markedly alkaline and contained about twenty-five per cent. of albumin, also some cholesterin crystals; no sugar. It was capable of digesting both starch and albumin. The cyst was incised and drained through the gastrocolic omentum. The patient made an uneventful recovery.

In the discussion Dr. G. L. Peabody thought it was rather unusual not to have jaundice in these cases, as the cyst, if of large size, generally pressed on the common duct. Several years ago, the speaker said, he saw a case of pancreatic cyst which had been mistaken by several physicians for cancer of the stomach. The true diagnosis was not made before the autopsy.

Dr. Abbe, in reply to a question, said that drainage seemed to effect a permanent cure.

Dr. E. G. Janeway said the presence or absence of jaundice depended somewhat upon the location of the cyst. He had seen two cases, in both of which jaundice occurred. If the head of the pancreas was not involved, there might be no jaundice. The speaker referred to two cases of pancreatic cyst coming under his observation in which no tumour could be made out, and the condition was not recognised during life. Regarding the etiology of some of the deep abdominal cysts, some writers have regarded them as originating from the remnants of the Wolffian bodies. Dr. Janeway also drew attention to the possibility of some of the supposed pancreatic cysts being intraperitoneal.

In reply to a question by Dr. Robinson, Dr. Abbe said that in the cases in which he had observed there was nothing in the stools to aid in the diagnosis. He regarded them as retention cysts.—*From report of Practitoners' Society meeting in Medical Record, July* 22, 1899.

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## ORGANS OF URINE AND GENERATION.

### 98.—X-RAY DETECTION OF RENAL CALCULI.

By Robert Abbe, M.D.

[The author gives details of cases with illustrations. This further aid to diagnosis promises to be of considerable value in the sometimes very difficult subject of renal calculus. The author thus concludes his article :]

It will be seen from these reports that stones of various sizes, down to one-half inch in largest measurement, have been unmistakeably shown. The case last reported by myself, I think, shows the stone of smallest measurement. Of an irregular triangular shape, the longest measurement one-half inch, it presented the thinnest aspect for penetration, only three millimetres at its thickest part, yet it gave an unmistakeable shadow with the tube placed twenty inches from the plate, and one minute's exposure. To appreciate the meaning of a skiagraph requires as much experience as the technique of taking them, and to the casual observer a plate that shows a few uncertain shadows can be interpreted with no uncertain meaning by an experienced eye. Regarding the technique of picture-taking I would say, right here, that the following details are essential :

*Delicate and Fresh Sensitive Plates.*—Rubber tissue should be interposed between the patient and the plate to prevent perspiration dampening the paper. The fluoroscope is useless. The photographic plate must be placed well up beneath the patient's back, including the last four ribs. As to the machine and tubes, much has been written about the relative merits of the static machine and coil, hard tubes and soft tubes; but my own observation leads me to think that whatever will make a good bone shadow quickly will make a shadow of a calculus. The quality of a rib and the average renal calculus being not very different as to impenetrability. In the radiograph of the normal loin there should be no shadow of the kidney substance, the muscles, fascia, intestines, or abdominal wall, which should resemble in any way the shadow of a renal calculus. Most cases of renal calculus in middle life can trace their earliest symptoms to youth, hence we may occasionally be able to detect small calculi in the easily taken young subject by a quick exposure; hence the opportunity of early removal of calculus before it has resulted in permanent damage to the kidney, will surely occur more frequently than heretofore. As to how small a calculus can thus be discovered, I will enumerate, among others, but one experiment.

Seven calculi, six renal and one urate, were made the subject of the following experiment: A large kidney having been sliced open, and these calculi distributed within it, an amount of meat (beefsteak) was placed on either side, to make in all four inches thickness. An exposure of ten minutes and one of fifteen minutes were made, and the subsequent development showed that the shorter exposure was more clear. The smallest stone, one-eighth of an inch, was perfectly appreciable. In the longer exposure this had almost disappeared from the plate. This was also shown in plates on which many stones of equal density were placed. The contrasting impression of an easily penetrable stone (such as urates) was greater with very short exposures, which corroborates the effect seen in the cases narrated. The most useful plates are often those which at first sight seem failures. A wet plate may show nothing, but when dry and held in proper light, gives good results. A thin plate, looked at in broad daylight, shows nothing, but when held in front of a brightly illuminated sheet of clean paper, will give good shadow pictures. A thin plate will often display shadows, when moved rapidly from side to side under proper illumination, which would not appear to the observer when it is held quiet. As Shakespeare says, "Things in motion sooner catch the eye than what stirs not." A dense plate that seems impenetrable will sometimes reveal exquisite detail of bone, &c., when illuminated correctly, either by direct or reflected sunlight, with a proper screening of the observer's eye. A properly closed box, like a fluoroscope, adapted to the size of the picture, screens the observer well, and allows him to interpret shadows correctly. Photographs never show as well as a study of the negative itself.

In conclusion, the discovery of renal calculi by radiography has been demonstrated in twenty-seven published cases, proved by operation. It is probable that in most people of spare habit, and in young subjects, a stone in the kidney can be found with reasonable certainty. The technical work of producing a successful radiograph is as yet not thoroughly studied out, but it seems probable that a quick-penetrating focus-tube, with very short exposure, will show stones that would be lost by long exposure.—*Annals of Surgery*, *July*, 1899.

## 99.—TREATMENT OF WOUNDS OF THE URETERS.

By R. Lawford Knaggs, M.C., F.R.C.S.,
Assistant Surgeon to the Leeds General Infirmary.

The author (*Lancet*, May 27, 1899) has written a most instructive and exhaustive paper dealing with these, happily somewhat rare, accidents. It is based upon a case of his own, in which, during the progress of an ovariotomy, the right ureter was divided, and the accident at once recognised. The section was a partial one and between two ligatures, which had to be applied before the removal of the tumour. When this had been carried out, the ligatures were taken off, and the two cut ends of the ureter were brought together by fine silk Lembert's sutures, including the whole thickness of the urethral wall. Over the sutured ureter was brought some of the surrounding soft connective tissue. A Keith's drainage-tube was inserted, and the parts packed with iodoform gauze. The shock was severe. Pus began to escape at the end of three weeks, and continued to do so for nearly a month, at the termination of which period it was fairly evident that urine was exuding as well as matter. Gradually the fistula closed, and the patient remained well, and was following her usual occupation a year after the operation. Mr. Knaggs gives an account of the various procedures which may be adopted in the treatment of such untoward accidents.

The cut ends may be sutured, end to end, or the upper end may be fixed laterally into the distal portion, the open mouth of this latter having been ligatured. Then the upper of the two cut ends may be implanted, or rather, invaginated, into the lower, which is split longitudinally for the purpose, and fixed there by means of sutures. The lower end may be ligatured or otherwise closed, and the proximal end implanted into the bladder direct.

Implantation into the bowel is yet another method of treatment which has been employed, but the bringing of the ureter out on to the skin, or grafting it into the vagina, can only be considered in the light of temporary or palliative measures. Ligature of the open end of the proximal portion of the divided ureter has been suggested if there is necessity for the operation to be brought to a speedy close. It will lead to a subsequent nephrectomy.—*Abstract in Treatment, September* 28, 1899.

## 100.—AN EFFECTIVE TREATMENT OF VESICAL HEMORRHAGE WHEN CAUSED BY PAPILLOMATOUS GROWTHS.

By HERBERT T. HERRING, M.B., B.S.

[From Mr. Herring's paper :]

Sir Henry Thompson found that broad-based tumours of the bladder and the multiple growths formed the larger proportion of the cases giving rise to severe and persistent hemorrhage, and rendering nothing short of a suprapubic operation feasible, and then by no means always adequate to the removal of the growth. It thus occurred to him to try the effect of continued and frequent injections of nitrate of silver to repress or destroy the growth, and he met with two or three notable successes. These I conducted for him, and have since carried out in my own practice at his special request, with a result which enables me to say that we have found for most, if not for all, of these cases a real cure—at least a powerful agent for checking the increase of the growth.

The diagnosis of every case here recorded has been verified by removing a portion of tumour and subjecting it while quite fresh, without staining or hardening, to microscopic examination. Such specimens may be usually obtained by washing out the bladder freely with warm sterile water, examining the débris brought away for shreds of tissue and mounting them at once for microscopic investigation. Unless this is done immediately, typical specimens are not easy to find ; they readily break up and decompose if left to macerate. No case has been accepted without this test. The instruments used are a No. 7, soft, polished, slightly *coudée* catheter with the eye situated near the end, and a 4 oz. india rubber bottle furnished with a brass taper nozzle and stopcock, together with a standard solution of 1 gr. of nitrate of silver to 1 drachm of distilled water, acidulated with a small quantity of free nitric acid. The injections have been commenced by adding half a drachm of the standard solution (that is, half a grain of the nitrate) to four ounces of warm water (99° F.), and the strength gradually increased every day or two until one, or even sometimes two drachms, has been added. The maximum strength varies very much in individuals. I have never found it exceed two drachms, and it very often falls far short; but it is of the greatest importance so to regulate the strength of the nitrate of silver that no pain, increased frequency of micturition, or straining should follow the injection; and the only knowledge the patient may have of the operation is a certain feeling of warmth in the region of the bladder, which should entirely subside within half an hour. By thus very gradually increasing the quantity of nitrate of silver, the bladder becomes more tolerant, and a stronger solution can be injected without producing any of the above noted symptoms than would be possible if the full dose were resorted to at once. Occasionally, when the maximum strength has been in daily use for a considerable period, the bladder becomes irritable, and the strength must be reduced, but the treatment should not be stopped. As soon as the patient has learned to inject efficiently —throwing into the bladder half the contents of the bottle, retaining the solution for a few seconds and then letting it run off, and repeating the same process with the second half—he should do so daily; at night, perhaps, is the best time, for it is always advisable to rest afterwards. Before a patient can be trusted to make the injection himself, it is necessary to give him a few lessons in a uniform and systematic way of doing it, so as to ensure perfect aseptic conditions, absence of injury or irritation to the organs, and the desired effect of the nitrate in the bladder. He should continue this without intermission for four, five, or six months, reaching his maximum strength of solution some five, six, or more weeks from the commencement of the treatment. If then bleeding has ceased, as it should have done, he may inject every other day for six months longer, and afterwards every third day for a variable period. A patient having been subjected to this long course of treatment may discontinue the application, even for a year, without any symptoms recurring; but he should return to daily injections—commencing with minimum strength and gradually increasing—immediately blood appears in the urine. In this way hæmaturia, and also the growth, may be permanently controlled, and the patient may live in comfort for many years. The treatment at the start may occasionally increase the hemorrhage, but after several applications the blood lessens in quantity and finally disappears. In a few cases it never entirely ceases throughout the treatment, and is especially noticeable in small quantities at the time of catheterisation, though every precaution may have been taken to introduce the instrument with care. It is apparently caused by the catheter damaging a growth situated near the neck of the bladder. In such a case, when the treatment is discontinued, the hemorrhage ceases, and the after-effect may be quite satisfactory. Antiseptic precautions are, of course, of the utmost importance. The catheter should be well washed with soap and water, rinsed and plunged into water at 150° F. To lubricate the instrument I prefer plain olive oil or "liquid paraffin," which has been previously heated in small quantity in a test tube to 212° F. or more. The latter is perhaps the better, as it is not easily decomposed by heat, and is an excellent lubricant. The end of the penis should be well cleansed with a plug of moist antiseptic wool before commencing. It should never be forgotten that septic cystitis in a patient with papilloma of the bladder is an unfortunate complication. During the treatment shreds of tumour may often be found in the urine, differing very much from the characteristic papilloma.

With the exception of one case, in which Dr. Blackmore, of Salisbury, tried a solution of sulphur of copper (10 grs. to the ounce), no other agent than Ag $NO_3$ has been tried, though possibly others may be efficacious. I would also suggest that the treatment by continuous injections should be adopted after cutting, or when large portions of the tumour have been removed piecemeal through the urethra by instrumentation.—*British Medical Journal, July* 29, 1899.

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## 101.—ON SOME STRUCTURAL VARIETIES OF THE ENLARGED PROSTATE RELATIVE TO ITS TREATMENT.

By Reginald Harrison, F.R.C.S. Eng.,
Surgeon to St. Peter's Hospital.

[Parts of this paper, together with the illustration, are omitted here.]

Looking back at the experience of the past few years and the successes and failures which have followed, I do not think that there can be much doubt but that the failures are mainly due to the somewhat indiscriminate application of the method of treatment which happened to present itself at the time. The more recent experience connected with castration and vasectomy appears to add force to this conclusion and to indicate on further reflection that there are many variations with broad distinction in what we are accustomed to speak of, somewhat generally, as the senile or hypertrophied gland. With so much variety in the same genus it is unlikely to suppose that we shall find a single process of cure applicable to all the sub-orders. I have now passing before my mind at least three distinct and not uncommon forms of enlarged or hypertrophied prostate as met with in elderly men, to which I will briefly refer for the purpose of illustration. First, enlargement mainly proceeding from blood engorgement more or less chronic in its nature, where the prostate is assimilated with some of the characteristics of an erectile structure as observed in the penis and elsewhere. This condition may explain some of the nocturnally recurring symptoms which characterise the earlier developments of prostatic hypertrophy. When seen in the course of a suprapubic exploration of the bladder the projecting lobe or lobes with the internal meatus of the urethra on the upper surface sometimes resembles the glans penis in a very congested state. Secondly, the fibrotic prostate where the enlargement ultimately takes the shape of a pedunculated mass or masses of degenerated connective tissue and muscular fibre, with but little in common in structure with the preceding variety. In this condition the symptoms are usually those of much local irritation not unlike what a stone excites. Thirdly, where the enlargement of the prostate may be said to be self-contained and consists of an almost isolated mass of prostatic tissue resembling an adenoma which, like the kernel of a nut, easily shells out and can thus be enucleated.

What analogy, would I ask, pathologically or surgically, is there between these three conditions other than that at one time they each represented a healthy prostate? Or, what common feature do they present for the employment of any one special method of treatment, hitherto discovered, besides the liability from the size the prostate may attain, to obstruct micturition and so to render the use of a catheter necessary? [Mr. Harrison then points out that the same method of treatment cannot possibly be applicable to all these conditions.]

Putting aside as foreign to this paper the great majority of prostatic cases which are amenable to the catheter and the like expedients, and do not require operative treatment, for the reason that they get on fairly comfortably without it, my belief is that in vasectomy, McGill's suprapubic prostatectomy, bladder drainage, and possibly castration when the testis is diseased, we now have at our disposal reliable means for dealing with exceptional forms of this obstruction, subject to discrimination in their use when the gland is not of a malignant or cancerous nature. Recognising the difficulty in precisely determining these several limits it should be remembered that vasectomy occupies a different position to the others I have mentioned. When practised under certain conditions, as I have observed in a considerable number of cases operated upon and recorded, it has never been followed by any kind or degree of harm, so far as I am aware. Together with this it has seldom failed to relieve the patient, though not always to the same extent. The same cannot be said in respect to other operative expedients of this nature. These measures, however, will be demanded by the urgency of the strain on the urinary system relative to micturition without reference to any inability that may follow so far as the other factor in the dual function is concerned. Castration, whatever its effects on the prostate may be, extinguishes both desire and capacity, whilst vasectomy only appears to render fecundation impossible by the closure of the seminal ducts. Vasectomy should as far as possible be limited to the larger class of cases which are comprised in the first group, whilst those included in the second and third, by reason of their structural dispositions, have, I believe, furnished the instances in which prostatectomy has been practised with considerable success.

A few words may be added in reference to the individual cases to which these operations have been applied. Vasectomy has been largely successful in diminishing vesical irritability whether associated with catheter life or not. Hardly an instance was observed by me where this was not the case. Further, it was found, particularly in old hospital cases, that it enabled people to undertake work which their ailment previously interfered with. Similarly, in many instances it seemed to have averted resort to the catheter, or, more properly speaking, to catheter life—a life which when once commenced is seldom ended. By diminishing the size of the prostate it frequently rendered the use of the catheter tolerable and easy, and thus prevented irritation and hemorrhage which had previously been connected with this process. In other instances it was noticed that though it failed to restore natural micturition it was followed by a partial restoration of this function. Cases where fœtid states of the urine, bladder, and kidneys from long-continuing prostatic obstruction and inflammation, and where drainage was a necessary part of the treatment, often greatly benefited by suprapubic cystotomy. In several of the latter a removal of a portion of the large prostate which had become fibroid was successfully accomplished.—*Lancet, August* 5, 1899.

## 102.—PRIMARY MALIGNANT DISEASE OF THE PROSTATE GLAND: A CLINICAL STUDY OF FIFTY CASES.

By Hurry Fenwick, F.R.C.S.,
Surgeon to the London Hospital.

For practical purposes the author (*Edinburgh Medical Journal*, July, 1899), divides these into two groups: (1) the hard malignant growth, which to the touch and eye on section, and in its rate of progress is like mammary scirrhus; (2) the soft malignant growth, in the author's experience a much rarer form, which resembles in its naked eye appearance and rapid growth, mammary "encephaloid cancer." Between these two groups intermediate forms occur, neither very soft nor very hard, and partaking of the clinical characters of both groups.

(1) *Primary hard malignant growth of the Prostate.*—Three stages of development are noticeable, each having well-defined symptoms, and the transition from the first to the second is often abrupt. *First stage.*—On examination, per rectum, the finger detects a distinct hardness, often like a buried stone, in one or other prostatic lobe (71 per cent. of his cases started in one lobe), reminding one "of a stone felt in a half-ripened plum," its ill-defined edge shading off imperceptibly into the unusual denseness which can be detected around it. The other lobe is soft and healthy; soon, however, the latter becomes dense, almost like wood, but still the interlobar sulcus is maintained. Later on the finger recognises the increase in the tension of the prostatic capsule, until, like a glaucoma, it increases to a condition of extreme tension. Clinically the symptoms correspond. The onset of the disease was (in 60 per cent. of the cases) marked by frequent micturition, loss of stream-power, and straining to empty the bladder. In a few cases (16 per cent.) these initial symptoms had been passed unnoticed, and an attack of retention was the first thing to arrest attention. Rarely (4 per cent.) the first symptom was incontinence. These symptoms are due to the narrowing of the prostatic urethra, consequent upon the development of the new growth within the tight prostatic capsule. As the disease occurs about the "prostatic age" (50 to 63), and as the symptoms are identical with those produced by the benign form of "enlarged prostate" the two diseases are often confounded.

*Second stage—the "latent period" due to capsular rupture.* Just when the sense of obstruction and urgent frequency of micturition are most distressing, a sudden relief is experienced, followed by a "lucid interval," and for a brief space all appears well. The patient is free from pain and difficulty, the bladder has need to be emptied much less frequently, the catheter can often be dispensed with, and he can sleep all night. He now imagines himself completely cured. On examination the dense stone-cord prostatic lobe is felt flattened and elongated towards, and apparently fused with, the corresponding seminal vesicle. The "lucid interval" is due to the relief of tension from the giving way of the prostatic capsule, the rupture usually occurring at the posterior aspect and base, just where the prostate and vesicula seminalis join.

The *third stage* is marked by rapid emaciation, involvement of chains of pelvo-abdominal lymphatics and glands, and effects of pressure of growth on nerves and blood vessels; also by unilateral renal pain due to strangulation of the ureter by the encircling growth, this usually occurring on the side on which the growth originated. The hemorrhage which occasionally appears in the third stage may be profuse; it marks invasion of the mucous membrane of the bladder base usually on the side on which the growth began in the prostate, and generally indicates a septic termination of the case. Agonising spasms indicate spread of the hard growth between the muscular planes of the bladder wall. The harder and more indolent the growth the more delayed will be the appearance and the more protracted the duration of the "lucid interval." The softer forms invade and soften the capsule which gives way so gradually as not to be noticeable. The two unfailing symptoms of the supervention of rupture and extension are, however, rapid emaciation and the appearance of obstinate sciatic pains.

*Diagnosis.*—The chief difficulty arises where carcinoma attacks a chronically inflamed prostate, as there is here no typical course and no tactile characteristic beyond the presence of a dense indurated mass. It must also be remembered that a prostate enlarged by old age, hardened by inflammation, and irritated by presence of seminal calculi, is very akin in clinical characters to carcinoma. *Prognosis.*—The duration of the three stages in primary hard malignant growth of the virgin prostate is rarely more than three years. The termination of the case is either due to ascending septic changes in one kidney, or asthenia, the former being probably more common. In rare cases the rectum is involved, and obstruction ensues. The later course of the disease depends upon whether the chief stress falls upon the mucous membrane of the bladder, or upon the lymphatics of the bladder base and pelvis, in the former case profuse recurrent hemorrhages will appear, in the latter pain and marked wasting, hence where there is a large amount of residual urine and an absence of hemorrhage, we may prognose a course of less suffering from the bladder, but more suffering from pressure of lymph glands on nerve trunks. On the other hand repeated small hemorrhages early in the case mark invasion of the prostatic urethra, which will be followed by copious hemorrhages, and often rapid failure from septic absorption and ascending nephritis.

*Treatment.*—The frequency and straining of the first stage are relieved by belladonna and conium, which are best administered by suppository. Nux vomica, which is of such signal benefit in the earlier stages of "hypertrophied" prostate, is generally contraindicated in hard carcinoma. Morphia should be kept, as far as possible, for actual pain of nerve pressure. It is also worth while trying the modern anti-neuralgic drugs for the relief of nerve pressure pains. Daily and free evacuation of the bowels is most important. The employment of the catheter requires judgment. In a certain number of cases (16 per cent.) its use is called for to relieve retention. In these cases a soft rubber, or silk-web catheter is passed more easily than a silver one. In other cases if there be a large amount of residual urine, *i.e.*, 8 to 10 ounces, there is probably atony of the bladder, and the catheter will give relief, whereas if there be only a small quantity of residual urine, *i.e.*, 1 to 2 ounces, the irritation of the bladder is probably due to invasion of the mucous membrane of the prostatic urethra or bladder neck, and it is in these cases slight hemorrhages occur early, and suprapubic drainage will probably be required to give the patient relief from the frequent agony of micturition, which is much increased by carcinomatous urethritis. Suprapubic drainage is also called for in those cases in which great spasm of the detrusor is excited by intramuscular growth. Perineal section is to be grossly condemned in any case of malignant prostate, as it often induces great torture, and has caused mania. The only perineal operation permissible being prostatic capsulotomy to relieve extreme tension, but this in only hastening extension. Removal of the prostate, in Fenwick's opinion, is seldom practicable, and is likely to be of little use "when the diagnosis is sufficiently established to warrant the risk." In hard cancer of the prostate, colotomy is rarely needed for rectal obstruction.

(2) *The very soft malignant type.*—This occurred in 12 per cent. In all of these the growth was extremely rapid, and attained large proportions, and the first indication of its presence was rectal obstruction or retention. As a rule the finger entered the rectum with difficulty, and in two cases plunged at once into a soft bleeding pulpy mass on the anterior wall. In three cases colotomy was urgently called for within a few weeks of the symptoms. These cases were generally diagnosed as prostatic abscess at the outset. They usually died rapidly from sepsis.—*From Mr. P. R. Cooper's abstract in the Medical Chronicle*, 1899, *p.* 285.

## 103.—PRIMARY TESTICULAR MUMPS.

By Landon B. Edwards, M.D.,

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[From Dr. Edwards' paper.]

An endemic of parotitis prevailed in Richmond, Va., during the winter of 1898-99, extending well over into the spring months of this year. During this period, four cases of primary testicular mumps came under my care—all of them since the middle of January, 1899. Three of the four cases were in young men of fairly good health, who were medical students in the University College of Medicine. The fourth case was a young man who boarded in the house with one of these students. Other patients with ordinary epidemic parotitis were in the boarding-houses with these students; but their attacks of parotitis ran the usual course without noticeable incident worthy of record. In none of the four cases just referred to could the most exacting inquiry elicit the history of impure intercourse, or of recent venereal disease, nor was there history of injury or traumatism about the generative organs. In short, there was no recognisable cause for any disease of the contents of the scrotum—beyond the prevailing influence of epidemic mumps; nor had these patients had a previous attack of parotitis. There was a sameness in the clinical history of these four cases that makes a general description of the disease as it occurred in one a sufficient record for the others. Chilly sensations running up the back, followed rapidly by rise of temperature—in one case reaching, in a few hours, about 103° F.—marked the onset. Besides an almost coincident development of headache and nausea, enlargement, hardness, and tenderness of the testicle set in. In three, the left testicle was decidedly more affected than the right; in the fourth case, it was hard to say which testicle was most affected. There were diffused lumbar pains in all the cases, and in one case the pain was so severe and peculiar that varioloid was suggested. In each the testicle was enlarged, hot and painful before the end of the first twenty-four hours after invasion. During the second and third days after this enlarged, painful, feverish condition of the testicle began, a noticeable amount of swelling developed about the salivary glands—principally the parotids—which were sore on opening the mouth, or on pressure from without; but there was no abatement of the testicular trouble. The headache, lumbar pains, fever, and nausea continued. The affected testicle continued to increase in size—in one case reaching about three times its normal dimensions, and yet without material involvement of the epididymis, vas deferens, or other structure of the part. By the sixth day, the general signs and symptoms began to abate, and disappeared by the eighth or ninth day, so far as manifestations of the infection were concerned. In a few days more the enlarged tender testicles and the soreness extending up into the abdomen along the course of the spermatic cords gradually abated until recovery occurred. During the course of the disease, there was no urethral discharge, no bladder irritation, no evidence of suppuration anywhere, nor did the involvement of the epididymis leave any sign of permanent change in structure. While the neck glands became secondarily involved in three of the cases, in only one case were the signs of parotitis at all prominent ; and that case would have been spoken of as a mild case of mumps had it not been for the severe primary testicular involvement. In none of the cases were the testicular signs or symptoms modified when the salivary glands became secondarily affected. In each case effort was made, but without effect, to " draw the disease " to the neck glands—as the term is commonly used—by poultices, hot applications, &c.

As to treatment, guaiacol was used in two of the cases reported, without benefit ; but phenacetin, with salol and digitalis relieved much of the discomfort. Tobacco poultices over the testicles, and afterward absorbent cotton wet with 15 to 20 per cent solutions of ammonium chloride applied on the scrotum, and rest in bed relieved pain and hastened recovery. Of course, suspensory bandages for the testes, &c., were used. No impairment of function seems to have resulted in any of the cases. I have referred at such length to these cases of primary testicular mumps because they are rare, and do not find sufficient recognition in the books. Such cases occur in some epidemics of parotitis and not in others. Comby noted cases of febrile orchitis without parotitis during an epidemic of mumps. Morton described other cases under the name of " febris testicularis." Some military surgeons have described cases under the name of " rheumatoid orchitis," " primary infectious orchitis," &c. Kovacs reported two cases of orchitic mumps without parotitis. Laveran admits that orchitis may constitute the only manifestation of mumps. In the epidemic of 1832 at Chateauroux there were cases of orchitis without involvement of the parotid gland. The same was observed during the epidemic in Geneva. Desbarreaux-Bernard reported several cases of this abnormal form of mumps. During the epidemic of parotitis in Dantzig, of 29 soldiers having orchitis, 19 had no parotid swelling. Rizet, Boyer, Debize, Vidal, Jacob, Sorel, Laveran, Chauvin, Servier, and others have reported similar cases.—*Journal American Medical Association, October* 14, 1899.

## 104.—THE COMPLETE OPERATION FOR CANCER OF THE BREAST.

Notwithstanding the excellent statistics that such operators as Halsted in America, Cheyne in England, and Heidenhain in Germany, have been able to bring forward as the result of operations for mammary cancer that included the removal of all the lymph nodes that were suspected of infection, not all of the practical operators have been ready to concede that this form of so-called complete operation is the only surgical intervention justifiable in these cases. During last winter there was a series of discussions on this subject before the Royal Medical and Chirurgical Society of London, in which a number of prominent London surgeons took part. Not a few of the men who do large amounts of operative work still cling to the view that what has been called the incomplete operation may be employed. They object to the term "incomplete," which is a designation, and a very apt one, it would seem, of Mr. Watson Cheyne's invention, and claim that in certain cases the removal of the breast and of such lymphatics as are evidently infected is a radical operation, and the cure often an absolute one.

If anything has been made clear by the recent operative work in mammary cancer it is that on the first operation depends the ultimate prognosis of the case. Operations for recurrence are almost without exception merely palliative, and undertaken only to satisfy the patient's mind for the time being. It seems unfortunate, then, that there should be any hesitancy as to the thorough removal of all tissue reasonably open to suspicion of infection at the primary operation. Halsted's unprecedented results by his complete method are well known in this country, and show how much has been gained by radical removal. Since 1890 Cheyne has operated twenty-one times for mammary cancer, and twelve of his patients lived more than three years after the operation. Nine of these are still alive, six to nine years after the operation, and of the three who died only one is known to have died of cancer. What a difference between these results and those of the day not much more than ten years ago, when Billroth said that he was not sure that he had ever seen a patient with mammary cancer cured by operation.

There is still room for improvement in the matter of surgical interference in these cases, and the frequent references made in recent surgical literature to Halsted's suggestion that the supraclavicular as well as the axillary glands will have to be thoroughly removed shows the direction which operative advance will take. Most operators at present seem to consider this suggestion too radical, but so did the older surgeons of a few years ago when it was represented to them that it was necessary in every case to clean out the axilla. It seems but a question of time until this new suggestion will be very generally acted upon, and we can then confidently look for a still further reduction of the mortality from cancer.

Dr. Stiles of Edinburgh in a paper on "The Dissemination of Cancer of the Breast and the Necessity for Its Treatment by Extensive Operation" (*Brit. Med. Journ.*, June 17, 1899) brings out especially the fact that there are no macroscopic appearances of lymph glands that can be depended on to disclose their infection with cancer in the preliminary stages. "In its initial stage," he says, "cancer of a lymphatic gland gives rise neither to enlargement nor to induration, and the absence of these signs, therefore, does not necessarily mean freedom from malignancy." Even in the axilla, as he points out, lymphatic glands may often simulate fat clumps with only a small margin of glandular tissue, yet this tissue may contain emboli of cancer cells, for it would seem to be by embolism rather than continuity of pathologic process that cancer spreads among the lymphatics. Dr. Stiles then repeats Mr. Cheyne's advice as to thoroughness of the primary operation, and while he does not accept Halsted's views as to the advisability of the removal of the supraclavicular glands unless tissue removed from this region should prove on microscopic examination to be infected, he insists that the fascia of the serratus muscle shall be removed completely in every case, and to do this some fibres of the muscle itself must be taken with it, that the sheath of the axillary vein shall be removed, and the branches of that vein coming from the anterior thorax shall all be exsected in every case, as otherwise the lymphatics that accompany these veins cannot be eradicated with any certainty.—*A leading article in the Medical News, September* 23, 1899.

## AFFECTIONS OF THE EYE AND EAR.

### 105.—FOREIGN BODIES LODGED WITHIN THE EYEBALL.

By Edward Jackson, A.M., M.D., Denver, Col.

[From Dr. Jackson's paper.]

When a foreign body is lodged in the iris or anterior chamber its location is usually evident and its removal comparatively easy. It should be removed as soon as possible. The only exceptions I would make to this rule are: If the seat of lodgment is in the lens, or if the foreign body has been retained for some time and the eye has become entirely quiet, and the patient can remain within reach of skilled assistance in case irritation should arise. Powder grains are occasionally lodged on the iris or in the lens. I have never seen them penetrate more deeply than this, although sometimes they have done so, and in the great majority of cases they are arrested in the cornea. When after such an accident the eye has become entirely quiet, the finely powdered charcoal that alone remains of such a grain is not likely ever to cause irritation. But such grains are at first very irritating, and the eye may be lost while one waits for it to become quiet. If seen early, these injuries should be treated as other cases of foreign body similarly situated. It is sometimes possible to disentangle a foreign body from the iris and remove it, leaving the iris intact; but generally it is easier and safer to do a small iridectomy, removing with the foreign body the part of the iris that has become injured or infected by it.

A foreign body lodged in the crystalline lens causes traumatic cataract. If the wound of entrance is small, several weeks, or even months, may elapse before the opacity of the lens becomes complete, and the accompanying swelling will be very moderate; but if the opening in the lens capsule is large, the opacity increases rapidly and is attended with great swelling of the lens and sometimes increased tension of the eyeball. Aside from this there is little liability of a foreign body in the lens causing serious inflammation, or an iridocyclitis, ending in a degenerated eyeball. It is proper, therefore, to allow the traumatic cataract to develop, and then to extract it in the ordinary way, being careful to make a rather large corneal incision, and, if needful, doing an iridectomy to allow the free escape of the lens mass. Taking such precautions, I have never failed to remove the foreign body with the lens mass. If the foreign body is not thus removed the traumatic cataract will slowly shrink, and ultimately, in most cases, will be entirely absorbed, allowing the foreign body to come in contact with other structures, and perhaps cause serious damage. I have seen a chip of steel, hanging in the remains of a lens, beginning to cause serious inflammation twenty-eight years after the original injury, the eye having, according to the patient's statement, remained quiet all that time.

A foreign body entering the vitreous, and lodging there or in the retina, chorioid, or ciliary body, is almost certain, if not promptly removed, to set up such inflammatory and degenerative changes as in the end render the eye functionally useless and a menace to its fellow, through sympathetic disease. In very rare cases this does not occur. Foreign bodies of moderate or small size entering through the cornea, iris, and crystalline lens are much less likely to set up a fatal iridocyclitis than those which enter more directly through the sclera. Smooth and aseptic particles, such as bird shot or splinters of glass or hot metal, are less likely to set up chronic degenerative changes; and small particles firmly fixed in the fundus are sometimes compatible with useful vision. A few cases of this sort have been from time to time reported, and they should be taken into account when giving a prognosis or when the eye has become quiet, or is becoming quiet, when it is first seen. But they should not deter the surgeon from attempting the immediate removal of a foreign body from this region, whenever its presence and location can be certainly known soon after it has been lodged there. The chances of retaining a useful eye, or an eyeball that will not be dangerous to its fellow, are greatly improved by such removal. For particles of steel or iron, magnet extraction is the nice and scientific method of removal. But if, because of the lack of the necessary apparatus, or because of the composition of the foreign body, or the firmness with which it is embedded, magnet extraction is impossible, if the location of the foreign body is accurately known, I believe we should always attempt its removal with scoop or forceps.

The details of such removal must be specially adapted to each individual case; there is no time now to discuss them. But this one point I would insist on: With the foreign body should be removed all badly damaged or probably infected tissue—the track of the foreign body through the vitreous, and the bed of tissue in which it lies. This can only be accomplished through a free scleral incision, made if possible through the point of entrance. Half the vitreous may be lost in a cataract extraction without serious consequences, and equally large losses of vitreous will be quite as harmless in these cases if we can only eliminate infection. If we can save 10 or 15 per cent. of useful eyes by the extraction of the foreign body with the magnet, as heretofore generally practised, we can save two or three times as many by the careful application of well-known surgical principles to these injuries.—*New York Medical Journal, September* 23, 1899.

## 106.—UNCORRECTED ERRORS OF REFRACTION AND THEIR RESULTS.

By Leslie Buchanan, M.B., C.M.,
Assistant Surgeon and Pathologist, Glasgow Eye Infirmary, &c.

[From Dr. Leslie Buchanan's paper :]

Frequently the first symptom which attracts the attention of the patient is headache, recurring persistently in spite of good general health, often coming on in the early morning, and passing away about noon or soon after ; varying in character from dull pressure to acute pain like that of neuralgia, and in situation from being frontal to being hemifacial or hemicranial. The severity, as indeed the very presence of the pain, depends largely upon the state of general tone, the temperament of the patient, and the amount of eyework to be done. The fact that the pain frequently begins in the early morning, often leads to the erroneous conclusion that the pain cannot be connected with the eyes, which have then had several hours of complete rest. In some cases a dull pain is experienced in the eyes and across the brow during visual effort, which is often combined with a feeling of heat in the eyes and eyelids, and causes the person to lay aside the book or work for a few minutes to press gently with the fingers upon the aching eyes. The patient often thinks that the eyes are simply tired, but such a feeling should not be experienced in health, even when the eyes are being very constantly used, and indicates that there is a defect somewhere ; still, unless it is specially asked about, this feeling of tiredness is frequently not mentioned by the person complaining of headache. Young men working constantly at a desk frequently experience a sensation of insecurity, in some cases amounting to giddiness and sickness, when they lift the head, and which is really due to eye-strain. At other times there is complaint of temporary dimness of vision, of dark spots before the eyes, or of irritability of the eyes to light, which may be due to accommodative spasm or failure, to convergence defects, or to hyperæmia of the retina. One is frequently informed that a child has been noticed either winking very frequently, holding the head to one side and close to the work, or even complaining that the blackboard at school cannot be seen. Purely local symptoms are more manifest, but are also too often mistaken for manifestations of a general and irremediable weakness which will "be grown out of." Congestion of the margins of the eyelids, at times amounting to blepharitis, and accompanied by incrustation, the frequent occurrence of chalazia, hyperæmia of the conjunctiva, annual attacks of phlyctenular ophthalmia, &c., are all frequently due to uncorrected ametropia, and will hence be simply and effectually remedied and prevented by the accurate adjustment of glasses. Alternating strabismus in childhood, which is too often thought to be due to imitation or habit, and which, if unattended to, is apt to become permanent, is usually due to want of balance of muscular power, and frequently may be checked by the use of suitable glasses ; whilst later in life, when a squint has become permanent, it is well recognised that unless suitable spectacles are worn, an operation may not bring permanent benefit.

Although the existence of a special type of neuritis depending upon eye-strain for its existence need hardly be claimed here, yet it must have struck most observers as remarkable how frequently it is found that congestion of the optic nerves is associated with hypermetropia and astigmatism. In cases of simple, and not very intense, hyperæmia, a complete recovery is generally seen, but where there is much disturbance, some defect usually remains for years. Yet, if a patient will rest and use glasses, in most cases it may be said that the prognosis is good. In another sense, however, neglect of the eyes may bring about a permanent, or almost permanent, loss of vision. If for any reason, such as astigmatism of high degree or hypermetropia, an individual is unable to maintain the accommodative effort required in binocular vision, and allows one eye to deviate, the preceptive mechanism of the deviating eye may become sluggish in action, and ultimately cease to act altogether. In such cases, only accurate correction of the ametropia, with careful training and stimulation, will bring the eye up to a comparatively good state.

In conclusion, the positive opinion may be expressed that even now much damage is done yearly to the eyesight of children and young people by the neglect of what should be a recognised duty, viz., to have a careful examination made of the eyes of all children who, by complaint or action, indicate that their visual powers are not perfectly healthy.—*Glasgow Medical Journal, July*, 1899.

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## 107.—THE REMOVAL OF THE LENS IN CASES OF HIGH MYOPIA.

By Adolph Bronner, M.D.,

Senior Surgeon to Bradford Eye and Ear Hospital, &c.

[From Dr. Bronner's paper.]

In the first place, when ought we to operate? We should remove the lens in all cases of myopia in which, with the help of concave glasses, the patient cannot obtain such an amount of vision as will enable him to follow any ordinary occupation, or in which the use of glasses, although affording serviceable vision, causes severe pain or discomfort. We know by experience that in most cases no concave glasses of over 10 or 12 dioptres can be worn with comfort. The lens should therefore be removed in some cases of from 10 to 15 dioptres of myopia, in many cases of from 15 to 20 dioptres, and in all cases of over 20 dioptres. The removal of the lens in myopic eyes does not make a difference of 10 dioptres as it does in emmetropic eyes. It makes a much greater difference—as much as from 16 to 20 dioptres—and this again decreases in myopic eyes of over 20 to 25 dioptres. This is a most interesting and important fact and it is one which is difficult to explain. Hirschberg finds that one can approximately estimate the strength of the glass required for distant vision by deducting one-half of the degree of myopia from 10 dioptres. Thus a myopic eye of 18 dioptres would require a glass of $10 - \frac{18}{2} = + 1$ D.; and an eye of $- 26$ D. would require a glass of $10 - \frac{26}{2} = - 3$ D. One great theoretical objection to the removal of the lens is that there would be loss of accommodation. This, however, is not the case. A myopic eye without a lens can accommodate to a very great extent and often better than when the lens is present. We know that in a high degree of myopia the range of accommodation is very limited. Present statistics seem to prove that if the lens is removed the myopia does not increase nearly so rapidly or so extensively as when the lens is present. This fact, if it were true, would be of the utmost practical importance. We should then recommend the extraction of the lens in all children with myopia of over 14 or 15 dioptres or even less, for we know by long experience that in these cases, if they are left alone, the myopia increases very considerably between the ages of 14 and 20 years. The field of vision in high myopia is often contracted, especially the temporal half, and there is frequently a large para-central scotoma. After the extraction of the lens the field becomes larger and the scotoma disappears. When strong concave glasses are worn the retinal image is often painfully small. After the operation the patient can see more clearly and with greater comfort. The great objection to the removal of the lens is the possibility of consequent detachment of the retina. Some statistics seem to show an increase of 2·5 per cent. in myopic eyes which have been operated on. But these figures are, from obvious reasons, not quite accurate. It will be some years before we shall have been able to watch a sufficiently large number of cases and for a sufficient length of time in order to make reliable and trustworthy statistics. The number of cases of detachment of the retina also to some extent depends on the skill of the surgeon. If during the operation there is loss of vitreous or if the vitreous is damaged by the discission needle there is great danger of the retina becoming detached. As regards the methods of operation we perform ordinary discission followed by linear extraction of the lens. In emmetropic or hypermetropic eyes after the age of about 30 years the nucleus of the lens becomes sclerosed and hard. In myopic eyes the nucleus remains soft and we can therefore perform discission up to practically any age. Care should be taken not to disturb the lens too much by the discission and not to cut through the posterior capsule, and also to let out the lens débris slowly and gradually. If these precautions are not taken there is danger of prolapse or loss of vitreous followed by detachment of the retina. There are numerous dangers connected with the removal of the lens, especially in elderly people. The wound may become infected by dirty instruments or by septic matter from the conjunctiva or the lacrymal sac. Glaucoma very often sets in after the operation, either in a few days or in from four to six weeks. The patient thereupon requires careful watching for some time. Then there is the possibility of iritis, of posterior or anterior synechiæ of the iris or lens capsule. It is therefore ridiculous to say that the operation is quite harmless and not attended by any great risk, as some surgeons assert.

Should we operate on one or on both eyes? We should operate on both, but on one eye at a time. If the lens is removed in one eye only the myopia of the other eye increases very rapidly and there is also a tendency to divergent strabismus. If both eyes are operated on we frequently get binocular vision which was not present before and there is no danger of divergent squint—in fact, slight divergence of the eyes frequently disappears spontaneously. If one eye is nearly emmetropic and the other very myopic—say, over five or six dioptres—we should remove the lens in the myopic eye. Ophthalmic surgeons know by experience that if the eye is not operated on the myopia will increase rapidly and extensively. As far as our experience goes at present we should remove the lens in high degrees of myopia, not only with the object of procuring better and more serviceable vision, but also, especially in children, in order to prevent any increase of the myopia. There are a very large number of unhappy people in this country with high degrees of myopia who are not able to read or to follow any occupation and even have difficulty in finding their way about. By the comparatively simple operation of extracting the lens many of these unfortunate people could be converted into happy and useful members of society.—*The Lancet, November* 18, 1899.

## 108.—MALARIAL EYE AFFECTIONS.

By Major M. T. Yarr, F.R.C.S. I., R.A.M.C.

[The following is taken from Major Yarr's paper:]

In the class of cases I propose to deal with in the present communication—mainly, diseases of the conjunctiva, cornea, and iris—the evidence of malarial causation is not so satisfactory as it is in the case of malarial affections of the fundus, as the demonstration of the plasmodia in the affected tissues has so far been lacking. Nevertheless, in many of these cases the suggestion of malarial origin is at least plausible, and in some of the clinical evidence in favour of paludism being the *causa causans* appears conclusive.

*Conjunctivitis.*—At least three different varieties of conjunctivitis have been found connected with malaria, namely: (*a*) Intermittent ophthalmia; (*b*) conjunctival injection, due to neuralgia of fifth nerve; (*c*) epidemic conjunctivitis. (*a*) *Intermittent ophthalmia* is thus described by Griesinger: "It is nearly always unilateral, and consists of a more or less marked hyperæmia of the eye, with photophobia, lachrymation, contracted pupil, and frequently swelling of the lids." There is some discomfort, but no neuralgic pain; the symptoms either come on during the attacks of fever in acute intermittents, or replace the paroxysm altogether; in the intermissions the eye is quite healthy; ordinary treatment fails to cure, but it yields readily enough to quinine. Curiously enough, the left eye is nearly always the one affected. That this form of conjunctivitis, accompanying or replacing the paroxysms of acute intermittents, is a real entity is undoubted in view of the many cases collected by acute and cautious observers; that it is directly due to malaria appears almost equally certain. (*b*) *Conjunctival injection due to neuralgia of the fifth nerve* is very common in malaria and malarial cachecties, as every practitioner in the tropics is aware, but can only be considered indirectly due to malaria. Pain in such cases is severe, and the conjunctival interjection comparatively slight. (*c*) *Epidemic conjunctivitis*—Epidemics of conjunctivitis have been attributed to malaria, notably that in South Carolina in the summer and autumn of 1882. The concurrence of the diseases, however, is probably accidental. *Xerosis.*—An affinity has also been traced between epithelial xerosis and malaria, and a connection undoubtedly exists, but probably only inasmuch as xerosis is the local expression of a general malnutrition of which malaria may be one cause.

*Keratitis.*—The various forms of keratitis which have been described as malarial may be conveniently grouped under three heads: (*a*) Dendritic keratitis; (*b*) Keratitis profunda; (*c*) Vesicular keratitis (herpes corneæ). (*a*) *Dendritic keratitis.*—Kipp (Newark, U.S.A.) has made a very careful study of malarial keratitis, and there seems little doubt that the "dendritic" form described by him, Van Millingen, and others, is not merely associated with, but directly due to, malaria. Kipp's first description of the disease appeared in 1880; in 1889 he gave his most recent results. In all he has observed this peculiar form of keratitis in no fewer than 120 malarial patients, in whom the connection between the malarial and corneal affection appeared to be quite clearly established. Beginning, in the course of or after a paroxysm of fever, with photophobia, lachrymation, and supraorbital neuralgia, the characteristic lesion of the cornea soon made its appearance, a peculiar narrow serpiginous superficial ulcer with lateral offshoots, like the skeleton of veins in a lanceolate leaf. Anti-malarial treatment cured most cases rapidly ; in a few, however, it had to be supplemented by local applications where the ulcerative process tended to penetrate deeply into the cornea. Kipp's observations were soon confirmed by several other American surgeons, notably Hotz, Miller, Sutphen, and Noyes ; the last-named drew special attention to anæsthesia of the cornea, and exaggerated tenderness of the supraorbital nerve as characteristic symptoms of the disease. The malarial dendritic keratitis described by Van Millingen in 1888 is evidently the same disease, "fungus-like lesions, with ciliary neuralgia and anæsthesia of the cornea." (*b*) *Keratitis profunda.*—Fuchs, in his *Textbook of Ophthalmology*, states that "intermittent fever in its chronic form of malarial cachexia sometimes results in a keratitis profunda, which is characterised by the absence of marked symptoms of irritation and also by unusually chronic course." A greyish infiltration of the middle and deep layers of the cornea at or near its centre, comes on very slowly, remains stationary for days or weeks and then subsides without producing any solution of continuity or in fact affecting the superficial layers at all. Under a lens the apparently homogeneous opacity is found to be made up of minute dots and striæ. Lévrier was, I believe, the first to point out the frequent association of this disease with malaria. (*c*) *Vesicular keratitis.*—Godo in reviewing 40 published cases of herpes febrilis of the cornea found that 13 had occurred in malarials, the corneal eruption being accompanied by herpes of the lips and nose. Tangeman, of Cincinnati, has met with a similar affection amongst malarials which he calls "keratitis bullosa." I hardly think however that this herpes corneæ can be considered as directly due to malaria.

*Iritis.*—Recorded cases of malarial iritis are not numerous, and in very few is the evidence of malarial origin perfectly satisfactory.

*Cataract.*—The only instances of cataract attributed to malaria which I have been able to find are two cases recorded by Bagot, of Guadeloupe. The first patient was a mulatto boy of 15 who had a severe bilious remittent fever with gastro-intestinal symptoms and coma; this lasted two or three days, and immediately afterwards his sight began to be affected ; three months later it was found that he had a soft cataract in each eye. The second patient was a mulatto girl of 16, who also had an attack of grave malarial fever lasting three days; immediately afterwards sight began to fail; nine months later she also was found to have a soft cataract in each eye. In the absence of more precise details, it seems hardly fair to comment on the above; but judging from the published facts alone, I am inclined to think the coincidence of malaria and cataracts must have been accidental.

*Anomalies of Accommodation.*—My friend Dr. Manson has shown me notes of a case of monocular ciliary spasm, associated with malarial aphasia, which he saw in Hong Kong; with the cure of the malaria the spasm disappeared. So far as I am aware this is the only case of the kind ever noted; the unilateral character of the spasm is exceedingly curious. Cases of malarial cycloplegia have also been recorded by Manhaert, Bull, and others.—*British Medical Journal, September* 9, 1899.

## 109.—THE ETIOLOGY AND TREATMENT OF IRITIS.

By John Griffith, F.R.C.S.,

Assistant Surgeon to the Royal Westminster Ophthalmic Hospital.

The author (*Treatment*, June, 1899) thinks that local treatment deserves the first thought. Mydriasis is produced by the instillation of a one-per-cent. solution of sulphate of atropine. The value of atropine is not merely to prevent adhesions of the iris to the capsule of the lens, though this is of paramount importance, but also, by paralysing the ciliary muscle as well as the sphincter pupillæ, to secure complete intra-ocular rest—*i.e.*, to suspend for a time all muscular movement within the eye, this to obtain physiological rest, the first and highest aim in the treatment of all acute inflammations. It is sometimes desirable to atropinise the second eye as well, even though not inflamed; by doing so, reading or using the sound eye for near work is successfully prevented. Atropine has still other advantages: it is an antiphlogistic; it reduces the amount of exudation and promotes absorption; it acts also as a local sedative. It is without doubt the drug *par excellence* for iridocyclitis. How much cocaine augments its action it is difficult to estimate; perhaps it does assist its sedative action to a slight extent. Besides the use of atropine, further local treatment is necessary. The eye should be protected from the light either by means of a broad shade, by the wearing of tinted goggles, or by the patient being kept quiet in a darkened room. In the worst cases, when the inflammation is most acute and the conjuntiva chemosed, absolute rest in bed is most essential. Local depletion by the application of leeches to the temple gives almost immediate relief, which is usually permanent. No drug can ease the pain so soon nor so effectually. The use of Heurteloup's artificial leech is better than no blood-letting, but cannot in point of efficacy be compared to the natural leech.

Hot applications to the eye are also very serviceable, especially in the rheumatic variety. The heat may be applied moist or dry. The dry pads may be kept on for some time without changing, but the fomentations should be repeated every half-hour. Local treatment varies very slightly whatever the cause may be ; there is, however, a point to bear in mind, and that is the occasional idiosyncrasy a patient has with regard to atropine. Atropine will sometimes create a severe local inflammation of the skin and cellular tissue of the eyelids and cheek, accompanied very often with a papular rash. Even a single drop of a weak solution may cause it to appear, and unfortunately the other mydriatics may all act in a similar fashion. The use of hydrobromate of scopolamine appears to be the least likely to be attended with such a consequence. Atropine poisoning in contradistinction to atropine irritation is less common, and the milder symptoms—dryness of throat, thirst, anorexia, sleeplessness, &c.—can usually be prevented by advising the patient to keep the lacrimal sac compressed for a few minutes after the drop had been instilled. Before passing on to the treatment peculiar to the cause, there are a few facts to be borne in mind. At the commencement of every attack of iritis a free purge must be given overnight and a "black draught" in the morning. Alcohol should not be taken in any form, nor should smoking be allowed. Rest in bed should be determined by the severity of the case. In the slow chronic forms of serous iridocyclitis, which often run a course of six months or longer, it would be wrong to keep the patient a prisoner ; he must have outdoor exercise, and it may be necessary to send him away to the seaside for a few weeks. It is obvious that constitutional treatment plays an important part in cases of iritis due to gout, rheumatism, syphilis, diabetes, &c.—*From Summary in the Therapeutic Gazette, October* 15, 1899.

## 110.—RETROBULBAR OPTIC NEURITIS.

By E. Nettleship.

[The following is taken from the conclusions based upon 88 cases referred to in Mr. Nettleship's elaborate paper :]

The figures show conclusively that this form of optic neuritis is especially a disease of the most sexually active period of life, and that during that period women are more than twice as subject to it as men. Apart from age and sex, we can in a certain number of the cases discover something in the patient's history that may fairly be credited with a share, predisposing or exciting, in the attack, but in many nothing is ascertained by an ordinary inquiry. Exposure to cold after the depression caused by worry, or simply after or during physical fatigue, is noted in at least nine of my cases, and this number is no doubt below the mark. A very definite history of gout in near relatives is given in about six of the series, and knowing the conditions under which such an inquiry is often made, we must take this number, too, as much less than the whole truth.

Of the infectious diseases, influenza seems to have occurred more often than any other shortly before the optic neuritis, and it appears to be answerable for some very severe attacks. There was a history of typhoid fever just before the eye attack in one or two, and of some form of malaria in two or three others; four cases in all. Syphilis was certain in two of the idiopathic series, and probable in three others; but in the two cases where it was certain, the primary disease had occurred respectively 12 and 20 years before the eye attack, and in one of these the patient gave a clear history of malarious fever a few weeks before his eye failed. I think, therefore, we may, for the present, conclude that syphilis is very seldom the cause of idiopathic retrobulbar neuritis, except when it causes a gumma in or upon the optic nerve; and such cases, of which I believe I have seen several, I purposely exclude, placing them in the symptomatic family. Very different is the share taken by syphilis, whether recent or remote, in causing by one means or another a symptomatic retrobulbar neuritis. In my symptomatic family I have provisionally placed 32 cases, and syphilis was certain, or almost certain, in about 17 of these—at least one-half—the primary disease dating from a few months to many years prior to the optic neuritis.

Lastly, the history shows in a considerable number of cases of idiopathic retrobulbar neuritis a predisposition to marked functional disturbance or organic disease of the nervous system. An attack of acute retrobulbar optic neuritis usually single, or if double with much delayed symmetry, generally ending in partial or complete recovery should, I think, always cause some anxiety as to the future onset of disseminated sclerosis or some other disease of the cord, not tabes. The great majority of these cases occur in women during the sexually active years, scarcely one-third being in men. Syphilis appears to take little, if any, share in causing the attack. It is difficult, with our present imperfect knowledge, to understand the occurrence of acute disease in a portion, apparently well-defined, of only one optic nerve, the active process lasting for a certain fairly constant period, and then passing off. The rapidity of onset points to either inflammation or slight infiltrating hemorrhage, and of the latter,—hemorrhage from a minute intrinsic vessel in the optic nerve,—we have, I think, no clinical knowledge (the phenomena of bleeding into the sheath-space are different). The character of the pain points to the orbital part of the optic nerve as the seat of the inflammation and the frequency of early—however slight—inflammatory appearances at the disc can best be explained by a lesion near to the eye.

If we accept as probable that some (perhaps not always the same) morbid state of the blood furnishes the foundation of the attack, the a-symmetry of the disease would be explicable only by supposing that the poison acted on the nerve fibres indirectly, inducing changes in the walls, or inflammatory obstruction in the channel of certain minute blood-vessels or lymphatics in the nerve. Speculation apart we need not refuse to consider the fundamentally toxic origin of retrobulbar neuritis simply because of its a-symmetry ; for gout is often a-symmetrical in single attacks, and this not only when perhaps located by injury or pressure, but in the iris and sclerotic where no such influences have occurred ; again herpes zoster though almost always one-sided, is sometimes caused by arsenic taken internally. In the treatment of retrobulbar neuritis, when seen early, I believe in the usefulness of counter-irritation and the administration of iodides and often of mercury. But we know too little as yet of the natural history of the disease, to speak strongly about the efficacy of any particular treatment, and allowance must be made, in the present state of knowledge, for apparent differences in the cause. Nevertheless it is true that most of the severe cases that have made a good recovery in my hands have done so under vigorous treatment. — *Ophthalmic Hospital Reports*, 1899, *p.* 25.

## 111.—ACUTE INFLAMMATION OF THE EAR, COMPLICATING SCARLET FEVER AND MEASLES.

By Dr. CHARLES H. MAY.

The author said that in an article written by him ten years. ago he had presented statistics from five thousand cases, showing that 10 per cent. of all deaf persons owed their affliction to an aural complication of scarlatina. Otitis was not so apt to complicate measles, and when it did it was more commonly of a mild catarrhal form. Aural complications were present in about

20 per cent. of all cases of scarlatina. The frequency varied in different years, and with different seasons, being greater during the colder months. There were two types of otitis, viz. : (1) the catarrhal, and (2) the purulent. It was often impossible clinically to differentiate between these two forms until after perforation had occurred. Apparently the streptococcus was responsible for the infection in the very severe forms of acute purulent otitis. This complication usually made its appearance near the end of the first week of scarlatina, and, in a general way, its severity corresponded with that of the throat inflammation. A rise of temperature to 102° or 103° F. at this time, associated with an aggravation of the constitutional disturbance, should lead to the suspicion of inflammation of the ear. The subjective symptoms were more or less intense pain in the ear, much worse at night, a sense of fulness and throbbing, and sometimes dizziness or noises in the ear. Infants were apt to place the hand on the affected ear, or on that side of the head. Examination of the drum membrane would show more or less redness, which, when limited to the upper part, pointed to severe purulent inflammation. In the catarrhal cases the redness was more diffused. Sometimes the membrane would be covered with a grayish layer of epithelium, thus obscuring the red colour. As the inflammation progressed, there would be more or less bulging of the drum, and if not relieved, spontaneous perforation of the membrane would take place, usually in the posterior part. In many cases after such spontaneous perforation, the process changed from an acute to a chronic one, and resulted in sloughing of the lining of the tympanum, and caries of the ossicles, and of the bony walls. This not only impaired the hearing, but constituted a menace to both health and life.

An important part of the treatment of this condition was its prevention, and this could be accomplished to some extent by proper care of the nose and throat. To properly cleanse the nose, the nostril of one side should be compressed, so that the entire force of the expiratory effort was expended upon the opposite or free nasal passage. In the class of cases considered in this paper, the writer preferred to cleanse the nose and throat by swabbing with a $\frac{3}{4}$ per cent. solution of sodium chloride. In carrying out the so-called abortive treatment, a sufficient dose of an opiate should be given to produce sleep ; the bowels should be evacuated, and the patient protected from draughts of air. *Dry* heat should be applied in the form of a hot-water bag, or if the pain were very severe, boric acid solution at a temperature of 115° F. might be allowed to run into the ear. The local abstraction of blood by means of the artificial leech applied in front of the tragus often gave great relief. He was an advocate in the early stage of middle ear inflammation of the treatment by inflation, preferring, when possible, to do it by means of the catheter. The introduction of the catheter was difficult, but not impossible. With the inflation, he was accustomed to employ suction of the tube and tympanum—a very useful addition to the treatment, which he had never seen described by others. Even by the Politzer method, suction could be practised. It must be confessed that in a considerable proportion of cases the abortive treatment failed. If the symptoms continued unabated, or were less severe by day and worse than before at night, the opening of the drum membrane should not be longer delayed. Incision of the drum was always excruciatingly painful, and hence the knife should have the sharpest possible edge. He preferred the Græfe knife, and making a free incision over the whole bulging area. Often only bloody serum would escape for the first few hours. After the operation, a little absorbent cotton should be placed loosely in the meatus, and the patient directed to lie upon the affected side to favour drainage. Irrigation should be resorted to only when the canal became blocked by tenacious mucus. Careful inquiry seemed to show that there had been fewer aural complications in connection with scarlatina and measles during recent years than formerly. They would be still fewer if the nose and throat were properly cared for, and my advice followed: "When in doubt, incise."—*Pediatrics, August* 15, 1899.

## 112.—INFECTIVE THROMBOSIS OF THE SIGMOID SINUS FOLLOWING CHRONIC PURULENT OTITIS MEDIA.

By Archibald Young, M.B., C.M., B.Sc.,
Senior Assistant in Surgery, University of Glasgow, &c.

[The following is taken from Mr. Young's paper :]

At the very outset one is met with the difficulty so commonly experienced in such cases—viz., the somewhat obscure diagnosis. Although in thrombosis of the *cavernous* sinus there exist, as a rule, definite enough aids to diagnosis, it is, unfortunately, not so in thrombosis of the *sigmoid*, or, generally, of the *lateral* sinus; and the irony of this is apparent when it is remembered that, even yet, the prognosis in the former is of the gravest nature, while, given early recognition and prompt operation, the prospects of recovery in the latter are now not nearly so remote as they were. Of course, when an extensive disintegration of the septic thrombus has occurred, and systemic dissemination of the infective material has begun to take place, there appear very soon unmistakeable signs of pyæmia—generally shown chiefly in the formation and development of septic pulmonary foci, with resultant abundant foul-smelling sputum (of ten blood-tinged), frequently repeated rigors, violent temperature variations, and, often, local tenderness and œdema, over mastoid, course of lateral sinus, and down course of internal jugular vein. These signs, with others indicative of constitutional disturbance of a grave nature, are, however, in the very nature of things, of only late appearance in the history of any given case, practically all being explained as indications of a general pyæmia. It may, indeed, be at once admitted that, given any considerable constitutional generalisation of infective material, the value of operative treatment becomes, at least, debateable. There remain, however, for consideration the doubtful cases, *i.e.*, those in which signs of pyæmia are not at all conclusive; where, *e.g.*, as in the present one, any lesions in the lungs remain of a strictly limited type; where, if infective foci exist, they are of a most minute type, never attaining to any considerable propertions.

The question as to how far infective foci in the lungs can be recovered from is still one admitting of discussion, but it seems at least probable, that foci of a minute size are capable of resolution, and, therefore, it is all the more incumbent upon the surgeon to give even the most unlikely cases every possible chance. The clinical difficulty which arises in the diagnosis of such doubtful cases is certain to complicate the situation, for in the absence, as has been said, of distinct pyæmic signs, the involvement of the sinus is often exceedingly difficult to demonstrate prior to operation. It is all the more important, then, that in all operations upon the mastoid region for any of the sequelæ of chronic purulent otitis media, at least where the smallest doubt exists, a careful investigation of the sinus groove ought to be made, especially if there exist signs of erosion of bone on the posterior wall of antrum. I believe it to be worth while, also, to draw attention to another point bearing upon this, viz., that, as a rule, it is not at all necessary to delay the complete surgical treatment of the part after the opening of an external mastoid abscess. The superficial tissues admit of very thorough treatment immediately free incision has been made, and it is matter of common experience that the tissues can be very easily rendered aseptic prior to the deeper exploration that must be carried out. Not infrequently one hears of mastoid abscesses in connection with a purulent otitis being treated by simple incision, and, at any rate, a considerable time allowed to elapse before the complete eradication of the septic accumulation in the middle ear, mastoid cells, and antrum. Such a method of treatment is, I believe, to be strongly condemned, for the risk of serious intracranial mischief is not by any means negatived by the appearance of pus externally. The latter may be regarded in the light of a danger signal, certainly not in the light of a safety valve. It is important, therefore, that even in apparently simple cases the sinus ought to be carefully and systematically investigated, and that at as early a stage as possible.

As to the actual surgical procedure to be adopted in any case of infective sinus thrombosis, it may at once be acknowleged that, in advanced cases, with the clot extending well towards the torcular herophili and down the jugular, nothing but a most extensive clearing out of the sinus contents and of the upper part of the jugular—a preliminary ligation of the latter well below the thrombus having been carried out—is likely to avail. It is in earlier cases, where the clot is still limited to the sigmoid sinus, and specially to the knee of the latter, that there is not a little difference of opinion as to the best method of treatment. In the case recorded by the author the method followed was that of a simple incision through sinus wall, the laying open of the knee of sinus, and the gentle evacuation of the semi-fluid débris. No attempt to completely dislodge the whole thrombus was made.—*Glasgow Medical Journal, October*, 1899.

## 113.—FORMALIN IN THE TREATMENT OF ATROPHIC RHINITIS.

By Adolph Bronner, M.D.,
Senior Surgeon to the Bradford Eye and Ear Hospital ; &c.

[From Dr. Bronner's paper read at the meeting of the British Medical Association, 1899.]

The first indication in the treatment of atrophic rhinitis (ozæna) is to thoroughly cleanse the nares and remove the inspissated mucus and crusts. The second indication is to alter the nature of the secretion of the mucous membrane, and thus prevent the formation of the crusts. This can, I claim, be most satisfactorily achieved by formalin. I generally order an alkaline lotion for removing the crusts to be used with a Higginson's enema, and with as much force as possible without causing serious discomfort. If there are any patches of hypertrophy of the mucous membrane, I remove them with the galvano-cautery or trichloracetic acid. Innumerable sprays and insufflations have been recommended in the treatment of atrophic rhinitis. I have for some time used formol or formalin. In bad cases I prescribe a 1 in 1,000 to 1 in 2,000 solution of the liquid formalin with water, to be used with a small nasal syringe ; or a 1 in 500 to 1 in 1,000 solution, with a little glycerine added to be used with a coarse spray three or four times a day for a few days, and then two or three days in the week for a few weeks or months. If the application is painful the solution should be diluted with water. Formalin has a most powerful action on the glandular tissues, how I do not know, but I believe that it acts directly on the cells of the glands. It is therefore very important that the solution should not be too strong, or used for a very lengthy period of time. Formalin has also a powerful deodorising action. In cases of fœtid atrophic rhinitis, or, as some call it, ozæna, it is most useful in removing the most disagreeable and penetrating smell. In many cases of atrophic rhinitis the accessory nasal cavities are affected, particularly the maxillary antrum. Until these have been treated and cured, any local treatment of the nares must necessarily be futile. In my small experience the maxillary antrum or antra are affected in about 25 or 30 per cent. of all cases of ozæna. In the after-treatment of atrophic rhinitis I have recently tried insufflations of tannoform (a combination of tannin and formalin) with boric acid, and found it most useful. In conclusion I should like once more to state that atrophic rhinitis, fœtid or non-fœtid, has nothing whatever to do with syphilis.

In the discussion, the president (Mr. Cresswell Baber) recommended a Higginson's syringe for cleansing the nose, followed by a spray of mercury perchloride. He agreed with Dr. Bronner that empyema of the antrum was present in a certain proportion of cases of ozæna, and that it was sometimes overlooked. Dr. Jobson Horne considered formalin superior to mercury perchloride in diseases of the throat and nose, more especially in infectious cases such as diphtheria, in which it was important to prevent the patient from infecting others. Dr. Pegler insisted upon the importance of thorough cleansing of the nose. He advised the mechanical removal of crusts by free douching with warm water injected through an Ingram syringe, before applying alkaline or other antiseptics. He had not used formalin, being quite satisfied with Mandl's iodine solution, preferably that of medium strength. Dr. Herbert Tilley (London) recommended a strong rubber ball syringe of about three-ounce capacity, with several openings in the nozzle, made by Krohne and Sesemann. This should be used at least twice a day with an alkaline antiseptic wash. Dr. Chevalier Jackson (Pittsburg, Pa.) had found a finely-powdered preparation of carica papaya very effective in softening crusts, by virtue of its solvent action on dead animal tissues. It had no action whatever on living tissues. He removed the softened crusts next morning by mopping with hydrogen peroxide, and then douched with an alkaline solution. Dr. Watson Williams

(Bristol) had tried weak formalin solutions in ozæna some years ago, but found that its action in removing fœtor and dryness of the mucosa was very transitory, unless it were used strong enough to cause at least considerable discomfort. Equally good results could, he thought, be obtained with alkaline solutions containing carbolic acid or some non-irritating antiseptic. He had not observed any frequent association of true ozæna with antral disease. Dr. Kipp (New York) uttered a warning against the use of formalin in young children. He had seen symptoms of gastric irritation from the employment even of a weak spray. The dangers of douching in ozæna were by no means imaginary, for he had seen many cases of otitis thus produced. A coarse spray of weak alkali, followed by Condy's fluid, had yielded him good results. Dr. Bobone (San Remo) said he could not get his patients to persevere with formalin on account of the pain and irritation. He recommended nascent silver iodide applied with a cotton wool brush. Refined petroleum was a good application after the crusts were removed. Dr. Bronner, in reply, said that he preferred to use formalin as a weak spray. stopping short of strengths that caused irritation. The risk of otitis was, he thought, much greater with the nasal douche, in which the pressure was continuous, than with any syringe in which it was intermittent. He had punctured the antrum from the lower meatus with Lichtwitz's trocar in cases in which he suspected empyema.—*British Medical Journal*, *October* 14, 1899.

## 114.—THE RHINITIS OF INHERITED SYPHILIS.

By StClair Thomson, M.D., M.R.C.P. Lond., F.R.C.S. E.,
Physician to the Throat Hospital, Golden Square, &c.

Inherited syphilis, as a rule, makes its first appearance a few weeks after birth. The symptoms are then mainly those of the secondary period of the acquired disease. The "snuffles" and chronic coryza are in themselves very suggestive of the inherited taint, but this catarrh is generally so constantly accompanied by other characteristic manifestations that the diagnosis seldom presents great difficulty. The same cannot always be said of the later manifestations of the disease. These generally appear from the age of four or five up to that of puberty, and "late" forms are recorded even after twenty years of age. The appearances correspond to the symptoms which characterise the common tertiary form of the disease, but are less definite, so that sometimes it is quite impossible to form an exact diagnosis from the appearances. These have to be supplemented by a full consideration of the history of the family and the history of the patient's general condition and previous illnesses.

The little girl aged 6½ years was brought for an attack of subacute otitis media, from which she soon recovered. Shortly afterwards (September, 1897) her mother returned with her, complaining that the mucus from the child's nose was thick, and that the bridge of the nose was becoming depressed. Nothing was found in the nasal fossæ, except some dry rhinitis, and the change in the configuration of the bridge of the nose was so slight that it could not be appreciated by anyone except the mother. At that date the child had all her temporary teeth, and nothing amiss was noticed with them. The case was seen in consultation with a colleague, but regarded simply as one of early atrophic rhinitis. It was treated with alkaline nasal lotions, and the syrup of the iodide of iron. The patient disappeared from observation, and only came under notice again in February, 1899. During the interval she had shed her temporary upper incisor and canine teeth. These had been replaced only by the two central incisors. These latter presented incontestable evidence of congenital syphilis. The characteristic peculiarities are that they are dwarfed ; the portion of the upper jaw from which they grow is stunted in its development, giving a certain "under-hung" appearance ; the two incisors stand somewhat apart, and slope away from one another ; they are unusually rounded, instead of being quadrilateral ; they are larger near the gum than at the free edge ("pegged") ; and they are "notched." This notch occupies the centre of the edge ; it is deeper and wider in the centre, and is shallower and narrower as it approaches the lateral borders. The dentine is exposed at the bottom of it. It is only these upper central incisors which show pathognomonic evidence of inherited syphilis in the teeth.

There was a slight falling in of the bridge of the nose. No lesion was found in the septum, but the atrophic changes in the turbinals were more marked, and the odour was rather that of ozæna than of acquired tertiary syphilis. The family history was carefully inquired into, and the fact was elicited that the mother had had three miscarriages previous to the birth of the patient, who was her only living child. The child's voice had become harsh and toneless, and this was found to be due to slight general hypertrophic laryngitis. She remained bright and intelligent, and no other evidence was found of her inherited disease. There is no doubt that this little girl was a victim of congenital syphilis, and that I had overlooked the exact nature of the rhinitis when she was first brought to me. It is easy to be wise after the event, and looking back now on the case as it first presented itself, I do not see how the diagnosis of inherited syphilis could have been positively arrived at. The family history in the present instance was sufficient to strengthen a suspicion ; but it could hardly be called on to do more than that, and in many other cases it would fail us.

I have insisted elsewhere on the importance of the early diagnosis and active treatment of syphilis of the upper air-passages, and I venture to think that the lesson to be drawn from the above case is that, when atrophic rhinitis attacks a child and its bilateral appearance cannot be satisfactorily accounted for, we should make a very complete investigation into the patient's previous illnesses and family history. If the suspicion of inherited syphilis is not then allayed, the child should have the benefit of the doubt by the administration of antisyphilitic treatment. Later on, if the characteristic changes are found in the teeth, the eyes, or the ears, these difficulties of diagnosis are, of course, not encountered. Since February last the patient has been treated internally with mercury and iodide of potassium and the usual attention to the nasal fossæ. The nasal condition has greatly improved. The atrophic changes are, however, so established in the mucous membrane that, as Lermoyez expresses it, she only remains cured so long as she continues the treatment.—*From a Reprint in the Journal of Laryngology, August*, 1899.

## AFFECTIONS OF THE SKIN, &c.

### 115.—PHARMACEUTICAL NOTES.

By Herbert Skinner,

Pharmacist to the Great Northern Central Hospital.

[The following, taken from Mr. Skinner's paper, is included here as it deals with applications for the skin.]

The preparations of petroleum have now an established reputation. Among its most important features as a base stands its greasy and non-drying property, whilst it is extremely doubtful whether the skin absorbs any of the base at all. From the success attending the use of petroleum it would seem that absorption of the base is not everything, seeing that the medicament, as witnessed in mercury ointment when made with a mixture of soft and hard paraffin, is absorbed more readily than with any other base. The greasy and non-drying property spoken of appears to me to facilitate the absorption of the medicament, especially in the case of water-soluble drugs, as longer continued rubbing can be indulged in, and less friction occurs on inflamed surfaces. Moreover, petroleum is the best fatty lubricator we possess, to say nothing about its cleansing properties, equally efficacious for the skin and hair-roots as for the more prosaic kitchen furniture. If we take the "Paraffinum Liquidum" of the British Pharmacopœia and rub it well on the hands, then dry with a towel, no matter how much we try to dry the hands, we shall find on testing with water that a thin pellicle is still left on, giving the skin a feeling of crispness that no other fatty base yields. The objections are that it is unsaponifiable and very little aqueous or spirituous liquid can be mixed with it. The addition of soap will make it more amenable for this purpose, as in the case of wool fat, but not to the same extent. Though I use the word petroleum, it should be understood that I do not mean the oil passing under that name in commerce, which is far too dangerous.

The liquid paraffin of the Pharmacopœia is colourless, odourless, and has the fluidity of thin syrup, the lighter portions are got rid of, and thus it contains heavier hydrocarbons. It can be satisfactorily used for a hair preparation:—Paraffini liquidi, 2 fl. ozs.; olei limonis, 10 fl. ozs. The best way to apply it is by means of a sponge to the roots of the hair only, and the head should be well brushed after its application. It is a very useful preparation, its virtue, I believe, lying in its cleansing and stimulating properties. A more vigorous one can be made by macerating bruised cantharides at 140° F. for about twelve hours, then straining, say:—Cantharidis (bruised), $\frac{1}{4}$ oz.; paraffini liquidi, 3 fl. ozs.; olei bergamot, 15♏. If applied in the same way as mentioned above, it may be followed by a spirituous lotion the next morning. When it is desired to apply turpentine, nothing better could be employed than liquid paraffin:—Olei terebinthinæ, paraffini liquidi, of each equal parts. I have spoken of the non-absorption by the skin of a paraffin base, and in order, if possible, to remove this, the market has been flooded lately with so-called oxygenated hydrocarbons. They are called "Vasogen," "Valsol," or by other fancy names. Thus far I have only tried a few, and though there seems a certain amount of absorption to take place, it is very difficult to tell whether there is so much as is claimed. Though there may be a doubt about the base, there is none about the medicament, and creolin, creosote, iodoform, mercury, and ichthyol are well worth a trial in combination with such bases. There is a Sanitas ointment made by the company, but I believe it contains only 10 per cent. of the oil. Some time ago I was asked for one much stronger, and the formula adopted was:—Olei "Sanitas," 2 fl. ozs.; paraffini duri, 1 oz. The wax is melted and the oil then stirred in. It is very strong, in fact, too much so in many forms of dermatitis, but its value as an application is undeniable. This leads me to a point not often brought out; that hard paraffin, when mixed with a volatile substance, as Sanitas, turpentine, &c., forms a far superior base than any other fat. There is no excess of grease, and it rapidly dries into the skin.

Quite the best cold cream I have seen for some time was shown me in a pharmacy the other day. Its formula is:—Adipis benzoati, 4 ozs.; ceræ albæ, ½ oz.; cetacei, 1 drm.; boracis, 30 grs.; glycerine, 1 fl. drm.; aquæ coloniensis, 2½ fl. ozs. Below I give a zinc and ichthyol cream, soon drying and forming a thin pellicle on the skin, easily washed off when necessary:—Zinci oxidi, ichthyol ammon., each ½ oz.; adipis lanæ hydros., 1 drm. It becomes very hard if kept long.

In prescribing resorcin, care should be taken to avoid a combination with salicylic acid, as the two are incompatible; it is seen especially in a collodion menstruum, not so much in a fatty one. There is another point to recollect about resorcin, that is the rapidity with which oxidation takes place. This is very markedly seen in ammoniated mercury ointment, the white turning to blue-black in a few days. I was asked for a strong preparation of resorcin, and devised the following:—Resorcin, ½ oz.; solut. saponis mollis (1-3) alcoholic, 3 fl. drms.; adipis lanæ anhydros, ½ oz. The resorcin is dissolved in the alcohol and incorporated with the melted wool fat. The same rapid oxidation spoils this, as well as the others. A petroleum base is the only satisfactory one for resorcin.

The numerous unsuccessful remedies for urticaria tempt me to give the undermentioned. It is very simple, and often successful in allaying the itching, burning sensation so characteristic of this complaint:—Liquor. hamamelidis, 2 fl. ozs.; sal. maris, ½ oz.; aq. destillat., to 1 pint. To be applied freely. Below is a preparation of iodine which will recommend itself by the removal of the staining objection. It is absorbed much more readily than others, and is very clean in its application:—Iodum resublimatum, 24 grs.; acidum oleicum, to 1 fl. oz. It is very soluble, and can be used stronger if needed.—*Journal of Dermatology, June*, 1899.

## 116.—THE TREATMENT OF PRURITUS.

In treating pruritus it should be remembered that it may be both primary and secondary. In the primary cases it is simply due to some local irritation of the skin; in the secondary cases it arises from Bright's disease, jaundice, diabetes, acid dyspepsia, and similar conditions. Pruritus can also be divided into generalised itching and local itching. The generalised form often comes on periodically, and its onset is often produced by disturbances of the emotions, severe intellectual disturbances, marked alterations in diet, sudden variations in temperature, and particularly the development of heat of the skin when the patient gets into a warm bed after undressing in a cold room. Besides these forms we also have that generalised form of pruritus which is seen in old persons, and apparently depends upon malnutrition of the skin and upon gouty tendencies. In the way of localised pruritus we have that form which invades the neighbourhood of the anus and is most frequently aroused at night, affecting often the coccyx and scrotum, and often aggravated by the presence of hæmorrhoids. In women we frequently have pruritus of the vulva produced by pregnancy, the menopause, and local irritation. Pruritus of the prepuce in males is often due to the passage of diabetic urine. Very rarely indeed pruritus of the palms and plantar surfaces is met with. This affection, although rare, is usually persistent. In making a diagnosis of pruritus it must be remembered that anal pruritus may be due to the presence of seat-worms, and that itching of the skin in other portions of the body may be due to various parasites, such as pediculi and scabies.

The treatment of pruritus depends very much upon the condition which produces it. In cases of jaundice, the use of phosphate of sodium and similar substances will often be advantageous. Dietetics will perhaps do the most good in cases of diabetic pruritus; taking care of the skin and the use of diuretic drugs may be of advantage in cases of renal disease. As a rule in diabetic cases, articles capable of undergoing fermentation in the alimentary canal should be avoided, particularly rich, greasy foods, and only small quantities of alcohol should be allowed, the patient living largely on green vegetables and roast and broiled meats. In many instances, particularly in those of gouty tendency, weak alkaline mineral water may be employed with advantage. Internally a prescription such as the following may be used to allay nervous irritation:—Valerianate of ammonia, 30 grains; tincture of valerian, 2 drachms; peppermint water, 3 ounces. Two teaspoonfuls of this in a wineglassful of infusion of camomile flower may be given three times a day. In other instances where there seems to be intestinal fermentation a pill composed of carbolic acid 1 grain, extract of valerian 4 grains, given three times a day, may be useful. Locally the treatment should consist in hot douches applied daily for the period of a minute, particularly over the vertebral column. In other instances full baths in which almond meal or starch-water has been added may be employed with advantage. In still other cases the addition of a quart of vinegar to the bath may be useful; and in still others the part may be locally enveloped in a cloth wet in an infusion of cocoa leaves in the strength of one per cent. In the way of sedative lotions the following may be employed:—Carbolic acid, 15 grains; glycerin, 1 ounce; water, 3 ounces; or, vinegar, 1 ounce; hot water, 3 ounces; or, hydrate of chloral, 30 grains; glycerin; alcohol, of each 3 drachms; water, 3 ounces. In other cases hot water alone is of advantage, and finally may be used a lotion composed of corrosive sublimate, 2 grains; alcohol; cherry-laurel water, of each 1 drachm; water, 3 ounces.

In the way of ointments the following are useful:—Menthol, 15 grains; vaselin, 3 ounces; carbolic acid, 15 grains; oxide of zinc, 2 drachms. Or, talc; oxide of zinc, of each 1 drachm; powdered camphor, 15 grains; vaselin, 3 ounces. In some cases a dusting powder may be useful, as for example:—Talc, 2 ounces; subnitrate of bismuth, 2 ounces; oxide of zinc, ½ ounce; powdered camphor, 33 grains. Orthoform has been employed in powder or ointment in some of these cases with temporary benefit, but it sometimes causes local irritation of the skin. In some instances the application of the continuous galvanic current to the skin is of advantage, the positive pole being placed over the itching part, and the negative pole at some distant point. In very malignant cases good results have followed linear scarifications or the use of superficial cauterisation with the thermocautery or with the electrocautery. Of course, these methods are only useful in cases in which the affection is localised. (*Journal des Praticiens*, *June*, 1899).—*Therapeutic Gazette*, 1889, *p.* 679.

## 117.—THE ROLE OF THE STAPHYLOCOCCUS IN SKIN DISEASES.

By Charles J. White, M.D., Boston.

One cannot attend a daily skin clinic without being struck with the frequency with which pus is encountered in the many various diseases which are presented for diagnosis. The conditions where pus is present may be divided into two categories: (1) where the disease is primarily and essentially of pustular origin; and (2) where pus is a secondary element due to accidental inoculation. In the first division we find impetigo, sycosis (non-tricophytica), ecthyma, furunculosis, abscess and carbuncle; and in the second I mention especially acne, impetiginous eczema, some forms of dermatitis, scabies, certain varieties of iodide and bromide eruptions, and afterwards the primarily vesicular and bullous affections and all cutaneous diseases where pruritus and subsequent scratchings play a part. To show a little more precisely how important a place our first division occupies in skin clinics, let me quote a few figures from the returns of the American Dermatological Association, which date from 1877, and of local interest from the records of the skin department of the Massachusetts General Hospital. From the former source we find that the group impetigo, sycosis, ecthyma, furunculosis, abscess and carbuncle constituted 5·19 per cent. of all skin diseases recorded, and from the latter records we learn that these same diseases comprised 0·6 per cent. of all the cases observed. As to the precise figures in the secondarily pustular affections it is impossible to speak, as of course there are no such minute statistics in existence. Suffice it to say that in my investigations the secondarily pustular diseases were exactly twice as numerous as the essentially pustular affections.

My investigations relate to the examination of all pustular lesions which were presented at the skin clinic of the Massachusetts General Hospital between February 23 and April 13 of this year. The material for inoculation was in all cases taken from under the unbroken skin. In enumerating the diseases I shall divide them into the two groups which I have described above, and must explain the comparatively small numbers of impetigo and ecthyma by the fact that these studies were carried on during the cooler months when poor children play mostly at home with their arms and legs protected by clothing. In the first group there were 11 cases of impetigo, 10 cases of sycosis, 14 of furunculosis, and 2 of carbuncle. In the second group there were 39 cases of acne vulgaris, 11 of dermatitis, 4 of syphilis, 3 of ringworm, 2 of lupus vulgaris, 2 of herpes, 2 of scabies, 2 of impetiginous eczema, 3 of iodide of potash and 1 of bromide of potash dermatitis, 3 of dermatitis venenata, 1 of herpes zoster and 1 of tuberculous gumma—in other words, 111 examinations. From this number the staphylococcus pyogenes aureus of albus appeared 88 times, the bacillus subtilis 4 times, the micrococcus tetragenus 3 times, the streptococcus 4 times, a doubtful bacillus once, and in 24 instances the tubes remained sterile. From 12 cases there were two different bacteria isolated and in 1 case three were found. Thus excluding the sterile cases and the non-pyogenic organisms, we find that in the first division of diseases there were 36 infections from staphylococci and 1 from streptococci, while in the second division there were 45 from staphylococci and 3 from streptococci. Therefore, these Boston figures lend themselves in a very striking manner to the theory of the staphylococcal origin of pustular affections of the skin.—*Boston Medical and Surgical Journal, September* 7, 1899.

## 118.—IMPETIGO CONTAGIOSA.

Unna and Mde. Schwenter Trachsler have subjected this common ailment to a critical examination (*Monatsh. f. prakt. Dermat.*, Hamburg, 1899, Nos. 5, 6, 7, 8). The historical portion is of much interest, and not only reflects the gradual evolution of ideas regarding it since Tilbury Fox described it as a separate disease in 1862, but enables Unna to indicate wherein his own opinions have undergone change subsequent to 1880. The authors desire to replace the designation impetigo vulgaris for that hitherto employed, in order to facilitate its discrimination from other less frequent impetigines. It seems, however, a pity to abandon an epithet which, besides having use and wont, really connotes the main element of the disease, its ready communicability. The characters of impetigo contagiosa are so constant, and manifest so few variations, that it is easily distinguished clinically from other similar skin affections, even from the rarer impetigines, such as those due to the staphylococcus and streptococcus. The primary eruption consists in small red, isolated points, on which, in course of from twelve to twenty-four hours, minute, centrally placed, clear vesicles form. In some of these the contents continue clear, in others they assume a milky aspect in one or two days. But whether or not, this primary vesicle may abort, drying up into a crust the size of a mustard-seed, which, on separating, leaves a red stain. In most cases, in course of from three to five days from the first, large concentrically disposed crusts appear rather suddenly. These, when typical, are translucent, horny, of a honey yellow, giving the impression of being composed of pure serum. This holds at least for the cheeks, chin, and forehead; but in addition, in uncleanly individuals, near the mouth, ears, or on the hands, there are greyish green, purulent, or brownish, blood-stained ones. The crusts may persist a long time, enlarging slowly. If displaced by scratching or otherwise, the serum which wells up gives rise to new ones, not so bulky, but wider. The origin of these larger crusts is due to the superadded formation of secondary vesicles, quite superficial, which insinuate themselves directly under the horny layer. In some cases this is owing to streptococci having become mingled with the impetigo cocci. When the crusts have fallen off, and the subjacent erosion become cornified, a round, smooth, red mark remains, an evidence of the marked dilatation of the vessels and the thinning of the epidermis. When it attacks the scalp it is often confused with the crusted eczema of that region met with in children. Here the eruption is more scattered, except on the occiput. The primary vesicles are seldom seen, while the secondary produce very thick crusts; for they soon burst, and the serum coagulates round the hairs. If the hairs are extracted, they show a much swollen root-sheath. The impetigo crusts afford a favourable sphere for pediculi. But these parasites are but an accidental complication, have no connection with its etiology, and are only met with in a proportion of cases. Only very occasionally is the disease encountered on the mucous membrane of the lips, gums, tongue, or throat. Another rare complication is with purulent discharge from the external ear; this, though evidently in relation to impetigo contagiosa, does not cause any affection of the drum, nor produce perforation or otitis media. Very frequently, yet apt to be overlooked, is consecutive swelling and tenderness of the submaxillary glands when the face is implicated, of those of the neck when the scalp. There is no interference with the general health, any feeling of illness previous to the eruption is exceptional. Should there be, the disturbance is due to complications, and not to the impetigo. Itching in uncomplicated instances is but slight, and chiefly at an early stage. Infection most commonly occurs between three and ten years of age, either at school, or by playing with those affected. Impetigo caused by true pus-producing staphylococci exhibits vesicles which are really epidermic abscesses, appearing as hemispherical greenish yellow pustules, with an inflammatory areola. These last long, and form a small and thin crust. They are infrequent, isolated, occur over the whole body, and principally in adults. They are followed by deeper lesions, as boils or abscesses. The analogy with impetigo streptogenes, so rarely met with and of such evil prognosis, is chiefly theoretical. In this there is in the main a serious exudation, which but slowly coagulates; so that the loose, greyish yellow, muddy, and for the most part large, vesicles persist long. These may be diffused over the trunk in children, and lead locally to necrosis of the skin, and generally to sepsis. In treatment, it is to be borne in mind that the chief cause for the origin and propagation of the impetigo vesicles is an abnormal soakage of the epidermis. Thus it is that the skin in the neighbourhood of the mouth and nose in little, ill-tended children, so continually wet with secretions, or that close to eyes affected with conjunctivitis, from which tears overflow, are the areas of predilection. Hence, after the crusts have been cautiously removed with a blunt instrument, the hair, if the scalp is involved, being cut, the parts are well washed with soap and warm water, dried, and several times a day smeared with a zinc sulphur paste, which exerts a much more desiccating effect than an ointment. By selecting crusts as free as possible from impurity, the authors have been able to isolate a micrococcus which assumes both an ochre and a white colour. This has been inoculated with success, and reproduced the characteristic features of impetigo contagiosa. This in certain respects resembles both the staphylococcus and the streptococcus, but there are differences which are carefully formulated. There appears no reason to doubt that the true source of the disease has now been discovered, though its entire life history has not yet been worked out.—*From Dr. Jamieson's Periscope on Skin Diseases, in the Edinburgh Medical Journal, October*, 1899.

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## 119.—DIAGNOSIS OF TERTIARY SYPHILIS FROM SOME OTHER SKIN DISEASES.

By C. F. Marshall, M.D., B.Sc. F.R.C.S.,
Assistant Surgeon, Hospital for Diseases of the Skin, Blackfriars.

Tertiary syphilis of the skin consists in the formation of cutaneous and subcutaneous gummata, rupial ulceration, and ulcerating gummata; also conditions resembling tylosis, or hardening and thickening of the epidermis of the feet. The chief skin affections to be diagnosed from tertiary syphilis are lupus and tuberculous ulceration, lupus erythematosus, chronic ulcer of the leg, rodent ulcer, and leprosy. The typical syphilitic ulcer is usually circular, with well-defined, sharply-cut edges and a grayish floor. It often extends on one side, while cicatrisation takes place on the other side. Serpiginous ulceration is characteristic, and is caused by the confluence of several ulcers. Ulcerating gummata form deep excavations (the so-called "crateriform" ulcer). Rupia may commence as a bulla, which rapidly becomes purulent and ulcerates, or as an ulcerating papule. In either case the ulcer rapidly spreads and forms scabs, which become heaped up in the characteristic limpet-shell form. The diagnosis of this condition cannot be mistaken. Chronic ulcers of the leg are often difficult or impossible to diagnose; that is to say, given a chronic ulcer of the leg, it is difficult in many cases to say whether it is of syphilitic origin or not. In the case of multiple ulcers of the leg, some of the sores will probably be characteristic, and in any case they are probably syphilitic. But in the case of a single ulcer it is different. These chronic ulcers are often complicated with varicose veins or with chronic eczema, and induration of the tissues round the sore, so that all characteristic appearance is lost. Many such cases have no history of syphilis; but this is of little value, since we know that primary and secondary manifestations may be so slight as to escape notice by persons who are not of very cleanly habits. It is therefore hopeless in many cases to get any clue from the former history of the patient, and the best course of treatment to pursue is to put all doubtful cases on a course of iodide. This is the practice we carry out at the Blackfriars Skin Hospital, and many cases certainly improve under such treatment, although they may not have any of the characteristic appearances of syphilitic ulcers.

Tuberculous ulceration is usually secondary to pulmonary, intestinal, or glandular tuberculosis. It is generally situated at the junction of the skin and mucous membrane of the mouth and nose, in cases of pulmonary tuberculosis, and at the anus in cases of intestinal origin. In glandular tuberculosis it complicates abscesses and sinuses in the neck. The characters of the ulcer are the ragged, irregular, undermined edge, and the base often covered with yellowish tubercles. These characters serve to diagnose tuberculous from syphilitic ulcers.

*Lupus.*—This disease, although now known to be tuberculous in origin, is one of such definite clinical characters that it is best considered separately. It usually affects the face in young people, and its chief characteristic feature is the presence of the so-called "apple jelly" nodules. These are yellowish-brown nodules about the size of a hemp seed, situated under the epidermis. Their true colour is best shown by pressing on them with a piece of glass, which renders the skin anæmic, and shows them up by contrast. This method, suggested by Unna, is of great value in the diagnosis of doubtful cases. Each nodule consists microscopically of the elements of a primary tuberculous nodule, and sometimes tubercle bacilli may be found in them. The points which distinguish it from syphilis are the presence of the apple jelly nodules, the slow rate of growth as compared with syphilis, and the absence of the characters of the syphilitic ulcer, and of other manifestations of syphilis. Tertiary syphilis of the nose is usually a gummatous infiltration of the skin, with or without ulceration. There is frequently rhinitis and ulceration of the mucous membrane of the nasal cavities. It is of a much more dirty-brown colour than lupus erythematosus, and of much more rapid growth. It does not tend to spread to the cheeks, but rather downwards to the upper lip, and into the nasal cavities.

*Rodent Ulcer.*—This is a form of epithelioma. Its characteristics as given by Jacob, who first well described it, are the extraordinary slowness of its progress, the peculiar condition of the edges and surface of the ulcer, the comparatively inconsiderable suffering produced by it, its incurable nature unless by extirpation, and not contaminating the neighbouring lymphatic glands.

*Drug Eruptions* (*Dermatitis Medicamentosa*).—The most important of these is the *iodide rash*. This may take on several forms. Sometimes it is a papular erythema, sometimes acniform, more often pustular. More severe lesions are bullæ, resembling pemphigus, and solid skin tumours, resembling gummata. Some cases have been so severe as to be diagnosed as malignant disease or leprosy. It is most important to bear in mind the possible skin eruptions caused by the iodides when giving a course of these drugs, since the very effects caused by the drug may be attributed to the syphilis for which the drug was given. This is especially the case in the form of eruption resembling gummata, and occasionally it is difficult to distinguish such an eruption from syphilis. The chief points, however, are the usually mixed nature of the eruption in the iodide rash, its rapid appearance, and the fungating nature of the tubercular skin lesion. Cutaneous gummata (the tubercular syphilide) are usually more uniform, of a darker colour, and do not fungate; if they break down, they leave typical syphilitic ulcers, which the iodide tubercles do not. Another skin lesion produced by iodides is purpura, which was described by Dr. Stephen Mackenzie. It not infrequently happens that iodide eruptions follow the use of small rather than large doses of iodide, and they sometimes disappear when the dose is increased.—*From Mr. Marshall's paper in Treatment, October* 26, 1899.

## 120.—ON HYSTERICAL SKIN AFFECTIONS.

### By Dr. Rasch.

The paper by the author (*Dermat. Centralbl.*, Aug., 1899), contains a detailed account of a factitious Dermatitis vesiculosa, bullosa, et gangrænosa multiplex with keloid scars, in a servant girl, aged 18 years, with hysterical stigmata. There was mental disease on both father and mother's sides (father's brother and mother's sister). Patient eldest of eight sisters: No. 2 and 3 died in childhood or infancy, No. 4 living and healthy, No. 5, 7, and 8 died soon after birth; No. 6 died at seven from "tubercle of brain"; moreover, the mother said to have aborted at least twice. No sign, however, of congenital syphilis about the patient. She first came under observation at the Copenhagen Communal Hospital, in October, 1895, and was under observation both as an in and out-patient. She attended for the various leisons from that date until October, 1898. The factitious origin could not be proved, although she was an in-patient from January 18 to May 23, 1896. On July 26, 1896 (out-patient), there is a note that new ulcers have appeared under the bandage (arm). In March, 1898, she admitted that the original bullæ (October, 1895) were self-induced by means of cantharides plaster. The author rightly points out that many observers are too much inclined to look upon the lesions as purely vaso-motor and tropho-neurotic in origin; and in many of the published cases the artificial origin is either not mentioned at all or is at once excluded as *à priori* impossible. Rasch refers to Strümpell's case (*Deutsche Zeitsch. f. Nervenheilk.*, 1892, vol. ii.), in which the patient had suffered for nine years; it was eventually traced to caustic soda. As to Ehrl's case of two sisters, whose condition was described as *Gangræna cutis hysterica* (in *Wien. Klin. Woch.*, 1894), the cheat was subsequently exposed in Gussenbauer's clinic and traced to caustic potash. These two women were so expert that they produced at will, by means of the caustic agent, various kinds of lesions, such as erythema, vesicles, bullæ and gangrene. Sangster's case (Int. Med. Congress, London, 1881) was looked upon as artificial by Unna. This was also the opinion of Billroth with regard to a case shown by Neumann in Vienna (1882). It must not be forgotten, however, that gangrene of the skin may have a nerve origin, as is the case with true gangrenous zoster. Rasch points out that the application of the term zoster by Kaposi to attacks of gangrenous ulceration going on for years in two hysterical women is unfortunate. The Salpêtrière School, and especially Gilles de la Tourette, accept the fact as proven that gangrenous ulcerations of the skin may occur as a symptom of hysteria, but Rasch remarks that, in the accounts of cases he has read, the artificial origin cannot with certainty be excluded. It is not necessary to point out in this place that some of the statements which have emanated from the hysteria section of the Salpêtrière must be taken *cum grano salis*, and that an attitude of healthy scepticism is imperative. But to return to the subject, Rasch remarks that in the hysterical a small amount of pressure is sufficient to produce, as de la Tourette has observed (*Bull. Méd.*, 1895), persistent urticaria, hemorrhages, bullæ, and even gangrene. Renaut (*Méd. Mod.*, 1890) has suggested that in hysterical cases the vaso-motor conditions may be favourable to the proliferation of the pyogenic micro-organisms of the skin. In his remarks on diagnosis, Rasch does not mention the importance of the linear, angular, and irregularly contoured lesions of factitious dermatitis. As to prognosis, the condition may be temporary, but in some cases the chronicity is such, and the mental condition so serious (suicidal attempts, as in Doutrelepont's case), that hospital treatment is indicated.—*Dr. Pernet's abstract in the British Journal of Dermatology, September*, 1899.

## 121.—DISEASES AFFECTING THE NAILS.

By Jonathan Hutchinson, F.R.C.S., F.R.S.,
Senior Surgeon to the Hospital for Skin Diseases, Blackfriars, &c.

[From Mr. Hutchinson's paper.]

First of all I wish to call attention to certain marks and grooves upon the nails which mark the date of some severe attack of illness, because here the problem is of the simplest and the causation unquestioned. These vary from transverse, white lines curving across the substance of the nail, to deep grooves and even hemorrhagic stripes, due to the effusion of blood into the nail-substance. These lines are by no means uncommon, especially after febrile or gouty attacks, but appear to bear no relation to the severity of the illness. In both these conditions the occurrence of the lesion appears to depend largely upon the structure of the nail, as in most cases it is only upon thick, strong nails that they appear at all, thin, brittle nails seeming to be largely exempt. Any severe disturbance of the circulation may cause discolorations. Then there are certain forms of disturbance which result in the formation of longitudinal markings or ridges down the middle of the nails, though as to the nature and causation of these we are quite in the dark. A red central elevation begins at the edge of the lunula, and travels down the nail so that an elevated central ridge results, then the nail becomes thin and brittle at its edge and borders, and begins to crack and scale off, and ultimately is entirely destroyed. The disease persists for years and is quite uncontrollable, and while it causes no pain, is most annoying on account of the hard unsightly red tips left upon the fingers after the destruction of the nails.

The two great groups of skin diseases which we term psoriasis and eczema have each their characteristic mode of affecting the nails. These may be roughly distinguished by saying that psoriasis usually attacks the free border and nail-bed and under surface of the nail, and spares the upper surface, while eczema generally attacks the root and folds of the nail and roughens and pits the upper surface. Although not an uncommon symptom in the course of general psoriasis, this form of nail disturbance may be the only symptom of the disease, and its nature is then proved by its yielding promptly to arsenic. I have frequently seen this condition, the only symptom in a patient, other members of whose family had well-marked psoriasis of other parts of the skin. Longitudinal thickenings and furrows are often produced, the nail is opaque and dirty-looking, and its surface rough, often stippled all over as with a series of shallow pin-pricks. It is a much more serious and disfiguring disease than psoriasis of the nail, but the two conditions not infrequently co-exist, especially in those cases in which both eczema and psoriasis are present upon the body, the so-called "mixed" cases of skin-disease. The thick nail suffers more severely than the thin.

There is a form of senile psoriasis of the nails, fortunately quite rare, which is extremely severe. Spreading from the nail-bed, it causes ulceration of the finger-tips and even leads to gangrene. It also affects the toes, and in two cases the degree of soreness produced was so great that patients were quite unable to walk. Indeed so violent is it, that we could hardly believe it to be psoriasis, were it not for the characteristic scaly patches upon the body and limbs which usually precede it. Of syphilis of the nails the chief thing to be said is that it presents an infinite variety of forms. There is no disturbance of them which it will not imitate. It often produces thick, fibrous ribbed nails; again, it imitates psoriasis and, in other cases, superficial erosions, like the pitting of eczema develop. They seldom permanently injure the nail substance or deform the nail, and they yield, though slowly, to mercury. There is a pustular disease, of unknown origin, which attacks the nails of children. Red spots appear in the nail substance, form minute abscesses and break through the surface of the nail. These pustules appear in crops, and are quite liable to recur several times. Ringworm affects the nails at times in a very similar manner, painful spots appear in the nails, and then pustules form which break through the surface. As a rule, only one nail is affected at a time, and the disease spreads slowly and obstinately from one nail to another. This, when it does occur, is so constantly associated with characteristic ringworm of the scalp or body, that I feel quite sure as to its nature, although I have always found the greatest difficulty in discovering or demonstrating the fungus in the nail substance itself. But this in my experience, is true of all parasitic diseases of the nails. Another rare, but more destructive disease of the nails is congenital pemphigus. This leads to the complete exfoliation of the nail and a most unsightly deformity of the finger-tips, and may be recognised by the presence of the characteristic bullæ upon the digits, forearms and legs; these seldom or never extend above the elbow or the knee. The disease often runs in families; thus in one instance, the mother and three sons were all attacked. The disease is chronic, extremely obstinate, and treatment is of no appreciable effect.—*Medical Press and Circular, July* 26, 1899.

# Obstetrics and Gynæcology.

## 122.—THE EARLY DIAGNOSIS OF PREGNANCY.

### By R. Von Braun-Fernwald.

The author (*Wiener Klin. Wochensch.*, 1899, 10) extensively reviews the literature of the early diagnosis of pregnancy. He places but little reliance up the early appearance of colostrum in the breasts, nor upon the bluish discoloration of the vulva and of the vaginal mucous membrane as early signs of pregnancy, as all may accompany other conditions. The softening of the vaginal portion of the cervix and the rhythmic contractions of the uterus are considered of no significance. The most satisfactory signs of early pregnancy consist in the change in form of the uterus, and its softer consistency, both of which are apparent on careful vaginal examination (bimanual). Braun-Fernwald began an investigation in G. Braun's clinic in 1894 as to how early it was possible to establish the Hegar sign in pregnancy, and this investigation he has been carrying on ever since. He found that by Hegar's sign pregnancy can but rarely be diagnosed before the end of the second month. The author finds the most important early sign of pregnancy is a change not only in the consistence but also in the shape of the body of the uterus, one side being thicker and softer than the other. He states that as early as the end of the first month one side may be double as thick as the other. The thicker side of the uterus is found to be soft, while the other is harder, approaching more to the consistence of the normal, empty organ. The softer, thicker part encroaches on the other smaller part beyond the middle line, and at the junction of these two parts there is a distinct longitudinal grove or sulcus, the fundus at the same time appears saddle-shaped with the shallow depression lying nearer the smaller horn. The longitudinal groove can most easily be felt on the anterior wall of the uterus.

In making the bimanual examination the author recommends that two fingers should be introduced into the vagina and separated as widely as possible, so that one finger may rest on the larger, and the other on the smaller part of the uterus. His explanation is that most probably the ovum becomes attached to the lateral wall of the uterus in the neighbourhood of a tubal orifice. By the development of the ovum the uterus on that side becomes thicker and softer than on the other, the empty side. The sulcus, he thinks, probably corresponds to the margin of the ovum, but it may be a result of contraction set up by the stimulus of the examination, and his assistant believes that he has found that its location is changeable. He states that the inequality is so marked in some cases that the larger part of the uterus may be mistaken by the inexperienced for a small myoma. The author states that with practice pregnancy can be diagnosed early with a great deal of certainty. The earliest time he has made a diagnosis by this sign was three days after one period had been missed. He considers that by this sign it is possible to be sure whether abortion in the earlier weeks of pregnancy has occurred or not. If the sign is positive the ovum is still there, if negative then it has escaped. The existence of extra-uterine fœtation is probable when other signs of pregnancy exist, but this sign is absent.

In the discussion which followed the reading of the paper before the Obstetrical and Gynæcological Society of Vienna, Hülb stated that in his opinion this sign made possible a certain diagnosis of pregnancy at a much earlier period than any other sign. He regarded the sulcus as due to uterine contraction. Lott stated that he had noticed the sulcus and that he agreed with Hülb that it was probably due to contraction. Schauta stated that he had noticed the condition to which the author had drawn attention, and agreed with him in his explanation of the increase in size and change in consistence in one-half of the uterus as due to the presence of the ovum. He also stated that in a case where he had diagnosed pregnancy by this sign, he later had an opportunity of examining the uterus, and found that the ovum occupied the harder part of the organ, while the softer half was empty. This, he thought, corresponded to the state of affairs which made Hegar's sign possible, namely, that in the cervix more fibrous tissue existed, causing it to feel hard to the touch, while just above it, where there existed only muscle fibres, was the soft area, and above this again the hard area of the uterus in which was located the ovum. Therefore, the hard half of the uterus as described by von Braun-Fernwald, he thought, probably contained the ovum, while the soft part consisted of the soft muscular tissue of the empty half of the uterus. He thought that this sign of von Braun-Fernwald would prove of great value after it had been systematically studied and observed.—*Montreal Medical Journal*, 1899, *p.* 524.

## 123.—THE TREATMENT OF ABORTION.

### By Dr. LANTOS.

In the *Monatschrift für Geburtshülfe und Gynækologie*, 1899, Band ix., Heft 5, Lantos contributes an interesting paper under this title. He limits his cases to those in the first three months of pregnancy, and naturally divides them into threatened and complete abortion. His cases numbered 300, and in them he recognised as the principal complications, bleeding and septic infection. His treatment consisted in thoroughly emptying the cavity of the uterus, unless he had positive evidence that all of the ovum had been discharged. Thus in 246 cases the uterus was emptied with the finger; in 4 with placental forceps, and in 50 with the curette. On examining these patients, in 184 the finger could be introduced into the uterus; in 24 only the finger tip, and in 10 two fingers, while in 32 it was impossible to introduce the finger. Nineteen of these cases were complete spontaneous abortion. Two hundred and eighty-one were incomplete. In the 19 cases of complete abortion, 17 made good recoveries without interference. The pregnancy in these cases did not exceed the second month. In 15 the uterus was easily emptied with the finger, while in 4 chill and fever called for the complete cleansing of the uterus, and in 3 of these patients the temperature immediately and permanently fell. One of these cases ended fatally from septic infection; this was the only fatal case in the 300. Of the 281 incomplete abortions, in 221 the entire placenta or part of it was retained. In 60 portions of decidua were left behind. The finger was successful in removing the placenta 216 times. In 4 patients the placental forceps was employed and in 1 the curette. Retained decidua was removed 49 times with the curette, and 11 times with the finger. The chief indication for active interference in incomplete abortion was bleeding, and of 196 cases of this complication, 195 were promptly controlled by emptying the uterus with the finger. In one of these patients it was considered necessary to inject a preparation of iron to stop the bleeding. In two of these fever occurred. One of these patients had an exudate in the pelvis at the time of abortion. The other had scarlatina, followed by a pelvic exudate, but both recovered. In the cases in which the abortion was completed because of the fever, the cervix was usually found partly open. Most of these cases did well as soon as the uterus was thoroughly emptied and disinfected. The cases of curetting, fifty in number, had bleeding as an indication in forty-four, and fever in six. In all of these the curetting was promptly effective. For washing out the uterus lysol was used in patients who had no fever, and in those who had, a weak solution of bichloride of mercury was employed. None of these cases were anæsthetised. The writer succeeded by manipulation in pressing down the uterus so that the finger could be introduced. The after-treatment consisted in liquid diet, cold applications to the abdomen, moving the bowels freely, and cleansing the external parts with an antiseptic, and limiting vaginal douches to those patients who had fever.

The writer sums up his experience in a series of formal conclusions, of which the following are the most important:—When the os is but little, if at all, dilated, bleeding is not an important complication, and may be treated by rest in bed and by vaginal douches. When considerable bleeding occurs it is impossible to stop the abortion, and treatment should be selected accordingly. Bleeding which persists after an abortion points to the retention of some portion of the ovum in the uterine cavity. As regards the importance of vaginal tampons in these cases, they do not prevent abortion, but their use favours it. When the uterus is empty, as a rule, the cervix closes. When, however, the cervical canal is partially open and bleeding is present, it is good evidence that the womb has not been emptied. In cases of complete abortion, when neither the ovum nor the appendages are retained, interference should not be practised except for some serious complication. In incomplete abortion, however, interference is imperative. The use of the intra-uterine tampon of gauze is most successful in cases of hemorrhage where the cervix dilates but little. As a rule, however, the more rarely an instrument or finger is introduced within the uterine cavity, the better for the patient. The finger is preferable in recent cases of abortion wherever it can be introduced. When, however, the case has persisted for some time, and the cervix is closed, gauze should be employed as a tampon until dilatation occurs, when the placenta is expelled, after which the uterus should be curetted. It is seldom necessary to dilate the uterus for curretting in cases of abortion. It is always better to curette or to empty the uterus with the finger rather than to employ intra-uterine douches. After the womb has been so emptied, bleeding should not be present, and its persistence points to the retention of some portion of the ovum. As a general rule, active treatment of abortion is prophylactic, because it prevents hemorrhage and infection. If the expectant treatment be followed the patient is exposed to bleeding, anæmia, fever, and retention of decidual and placental tissues and chronic endometritis. The danger of active treatment arises only when the operator is not aseptic in his methods. In all cases of septic infection complicating abortion, where either the whole or part of the ovum is retained, the uterus should be emptied as soon as possible and cleansed with bichloride solution. Where septic infection persists after abortion, the total removal of the uterus, tubes, and ovaries is indicated.—*American Journal of Medical Science, August*, 1899.

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## 124.—PRESENTATIONS IN LABOUR.

By R. D. Purefoy, F.R.C.S.I. (Master); and R. P. R. Lyle and H. C. Lloyd, Assistants of the Dublin Rotunda Hospital.

[From the clinical reports of the Rotunda Hospitals, for one year, November 1, 1897, to October 31, 1897.]

(1) *Pelvic Presentations.*—Of the 62 cases of pelvic presentation 34 were full time, 12 premature, and 16 non-viable. Twelve cases occurred in twin pregnancies. Of the 34 full-time cases 27 infants were alive and seven dead. Of those cases in which the infant was dead, one was a case of hydrocephalus, the after-coming head having to be tapped; another was a case of impacted breech, admitted from the country, where several unsuccessful attempts had been made to deliver her. A strong fillet of iodoform gauze was passed round the groin of the infant, and it was delivered by traction. In two others there was a large retro-placental clot, the placenta and clot coming away in each case immediately the child was born. Of the 12 premature cases six infants were alive and six macerated.

(2) *Transverse and Oblique Presentations.*—Seven cases presented themselves. In two external cephalic version was performed prior to rupture of the membranes, and a tight abdominal binder was applied. In one of these cases there was a presentation of the cord, but no fœtal heart could be heard, or fœtal movements felt, neither was there any pulsation of the cord, and the child was born dead. In one case one arm, and in another case both arms, were prolapsed into the vagina. In both cases internal version was performed under an anæsthetic, and the children were delivered alive. Another case of oblique presentation, where the breech would not engage in the brim, was delivered by bringing down a foot. Another case is reported under "Twins." In the seventh case a hand and foot presented; the head was in the left iliac fossa. A foot was pulled down, the head pushed up, and the child (which was large, being 8½ lbs. weight) was extracted with considerable difficulty; it was dead. In every case convalescence was normal.

(3) *Face Presentations.*—Of the six face presentations two were without special interest, and terminated naturally. In three others the child was anencephalic, two of which were associated with hydramnios. The sixth was a case of lateral placenta prævia, in which version was performed, and the child delivered alive as a breech presentation. Convalescence in every case was normal.

(4) *Brow Presentations.*—There were three brow presentations. Two were born as vertex, occipito-posterior; one of these was associated with hydramnios, and in the eighth month of pregnancy; the fœtus, although it survived for three hours, was macerated. This patient had a temperature six hours after delivery of 101° F., which rose to 102·6° F. next morning. A creolin uterine douch was administered, and the temperature gradually fell to normal, and continued so, the patient being discharged well on the eighth day. The third case of brow presentation was admitted with a history of the membranes having ruptured twelve hours previously. Meconium was coming away, os not fully dilated, head free above the brim, and no fœtal heart could be heard. Six hours later the head was still above the brim, but the cervix had retracted, owing principally to the formation of a considerable caput succedaneum. Version being contraindicated, owing to the condition of the uterus, the forceps were applied twice, but without success; the head was then perforated, a large quantity of fluid escaping from it. Craniotomy was performed, and delivery easily effected. It was a left fronto-anterior position. There was a large hydroencephalocele springing through the occipital bone, extending down the neck and back, and upwards on the scalp; it was about the size of a fœtal head. Convalescence was normal. *Prolapse of the Funis.*—There were 17 cases of prolapse of the cord. In the case of one of the children which lived no pulsation could be felt in the cord before delivery. Covalescence was normal in every case except one. She had a temperature of 101·2° F. on the second and third evenings; a vaginal douche was given on each evening, and the temperature fell to normal and continued so.

(5) *Hand and Head Presentations.*—On two occasions was the arm prolapsed in full extension in front of the head, once in the second of twins, and once in a 7-para, the head being fixed in the brim in both instances, when the hand presented through the vulva; delivery was left to nature and presented no difficulty. The child in the former case weighed 5½ lbs., in the latter 8½ lbs.—*Dublin Journal of Medical Science, November*, 1899.

## 125.—INDUCTION OF PREMATURE LABOUR.

By Malcolm Black, M.D.,
Senior Obstetric Physician, Glasgow Maternity Hospital.

[In giving an account of three years' experience of induction of premature labour for contracted pelvis in the Glasgow Maternity Hospital, Dr. Black thus describes the method employed :]

The method of inducing labour employed is that known as Krause's—namely, by inserting a gum-elastic bougie into the uterus, between the membranes and the uterine wall. The patient is first prepared. She has a general warm bath, and has clean hospital clothing put on before she is brought into the labour-room. If necessary, the rectum is emptied by an enema, and the bladder is ascertained to be empty. The pubis and vulva are then shaved and thoroughly washed with soap and warm water, and well swabbed there-after with creolin solution. A copious warm vaginal douche of creolin solution is then given before the introduction of the bougie. The bougie has been prepared by being first well washed, then steeped in 1 to 20 carbolic acid solution for at least four hours, and just before introduction placed for half an hour in 1 to 500 corrosive sublimate solution. A bougie is used only once ; when removed from the uterus it is at once burned; it is therefore always a new bougie which is used. The operator's hands have also, of course, been carefully sterilised. The bougie is guided into the uterus by the fingers, avoiding contact, as far as possible, with the vulva or vagina. Occasionally it has been passed by the aid of a vaginal speculum, in which way it may be done absolutely without contact with any extra-uterine surface except the lips of the os. When through the internal os, if pushed gently along, it will find its way up outside the membranes without rupturing them, and also without separating the placenta. It is passed up until its lower extremity is within the os uteri. The upper part of the vagina is then packed with a plug of sterilised gauze to keep the bougie from slipping out, and also to assist in stimulating the uterus. If pains are set up in twenty-four hours, the bougie may be taken out and the labour allowed to proceed naturally, the patient being also allowed to get up and walk about. Sometimes the os is found to moisten, soften, and dilate somewhat, although pains are not much, if at all, felt. If no effect has been produced by the bougie it is usually removed in twenty-four hours, a hot douche given, and another one or more bougies inserted. Pains are usually set up within another twenty-four hours, when the bougies are removed. If labour is loth to proceed, the smallest Barnes' bag is introduced (with aseptic precautions) as soon as the os is patent enough, and larger ones may be introduced later. Where possible, dilatation of the os is always best effected naturally by the bag of membranes, therefore we try and keep the membranes unruptured till the os is fully dilated. Should the membranes rupture prematurely, dilatation with Barnes' bags will probably be required. Ultimately De Ribes' bag, cautiously used, is useful in securing full dilatation. After the os is fully dilated delivery may be effected naturally, or, if necessary, by forceps or turning. If the head is found too large to come through, craniotomy will probably be done In our cases, from the introduction of the bougie to delivery, the time varied from twelve hours to eight days ; in the majority it was within four days. When the children are feeble they must be kept warm. We swathe them in cotton-wool and put them in an incubator. In private practice an incubator can be improvised in the shape of a large clothes-basket (found in every house), in which the baby, well swathed in cotton-wadding, can be surrounded by hot-water bottles enclosed in stockings, and packed in flannel or cotton-wadding. Placed beside a warm fire, with a draught-screen round it, this answers admirably.—*Glasgow Medical Journal, August*, 1899.

## 126.—INDICATIONS FOR CÆSAREAN SECTION AS COMPARED WITH THOSE FOR SYMPHYSEOTOMY, CRANIOTOMY, AND PREMATURE INDUCTION OF LABOUR.

By Dr. FANCOURT BARNES, of London.

There was no doubt that the practice of obstetricians of repute in the present day was to widen the limits previously enforced for the performance of the Cæsarean operation. The enormous mortality which attended the operation twenty-six years ago, and which was computed in 1880 from a series of one hundred and thirty-eight cases, by Harris, at 81·2 per cent., had been so far reduced that in experienced hands it was little higher than that of ovariotomy. Thus Leopold, of Dresden, had reported fifty cases with a maternal mortality of 8 per cent., and Olshausen last year a series of twenty-nine with a maternal mortality of only 6·8 per cent. This result was due entirely to the improvements introduced during this period in the technique of abdominal surgery, and especially in the method of suturing the uterine wound. The question therefore now arose whether the Cæsarean operation should not be performed in order to save the child, in circumstances previously regarded as necessitating craniotomy. Another recent tendency which was becoming more and more manifest was to regard operations involving the destruction of a living child in utero as unworthy of the present high efficiency of the obstetric art. If we set aside, then, craniotomy on the living child, there were three alternative procedures, viz., induction of premature labour, symphyseotomy, and the Cæsarean section. Induction of premature labour was of course limited in its applicability to cases in which the patient came under observation during pregnancy, and a prognosis of difficult labour could be established. The limits of pelvic space requisite for the passage of a viable child were well recognised and required no comment. The methods of starting labour had received no notable additions in recent years. The maternal mortality of the operation in competent hands was probably not more than 1 to 2 per cent., but the fœtal mortality was unfortunately high, being placed by the most successful operators at 33 per cent. No amount of technical skill could diminish this high rate of fœtal mortality, for it depended upon conditions over which the operator had no control, viz. : (1) The delicacy of the premature infant, and its consequent liability to suffer from the effects of labour ; (2) the frequent necessity for interference during labour owing to malpresentations, and deficient uterine action ; (3) the liability of the child to perish from malnutrition within the first few weeks of extra-uterine life. The other two alternatives, symphyseotomy and the Cæsarean section, being operations performed at term, naturally offered more favourable chances for the child. Under conditions which prevented the delivery of a living child *per vias naturales*, these two operations offered the only practical alternatives. Symphyseotomy must of necessity be very strictly limited in its application by the amount of pelvic space available. The object of the operation was to obtain a temporary increase in the size of the pelvis sufficient to allow the delivery of a live child by forceps, as an alternative to craniotomy. The amount of increase in the conjugate which could be safely obtained in this manner without injury to the sacro-iliac synchondrosis was only half an inch ; the operation was therefore applicable to only a small number of cases, viz., those which lie just outside the limits within which delivery by forceps or turning can be effected. The mortality of the operation had always been and still remained a large one, for a surgical procedure apparently so simple ; even in the hands of Pinard the mortality from 1892 to 1896 was 10·84 per cent. for the mothers, and 14·5 per cent. for the children. It will be observed that these figures compare unfavourably with those of Cæsarean section already mentioned, the mortality of symphyseotomy being actually more than double that of Cæsarean section. Comparison of Cæsarean section with symphyseotomy, in the light of modern results, seemed entirely in favour of the former. There were no limits to the application of the Cæsarean operation; it could be performed in the worst cases of pelvic contraction; in obstruction by uterine or extra-uterine tumours it offered not only a means of delivery, but also could be combined with complete removal of the cause of the obstruction; when the obstructing cause was irremovable, the patient could at the same time be sterilised and thus saved from the recurring risk of future pregnancy; it was undoubtedly the most rapid means we possessed of emptying the uterus, and might therefore find application in conditions of urgency, apart from obstructed labour; and lastly the mortality attending it, both for the mother and the child, was less than that of symphyseotomy, and was steadily diminishing. The following table compared the most recent statistics of the two operations:

| | Maternal Mortality. | Fœtal Mortality. |
|---|---|---|
| Symphyseotomy ... ... ... | 10·8 per cent. | 14·5 per cent. |
| Cæsarean section ... ... ... | 7·6 „ | 7·6 „ |

If we now referred to the operations done during the last ten years in the Royal Maternity Charity of London we were met on the threshold of our inquiry by the complete absence of the Cæsarean section. During those years no less than forty thousand women were delivered, and among these deliveries no indication for Cæsarean section had presented itself. The explanation of this remarkable fact was a simple one. It was explained by the absence of pelvic deformity in the city of London. This absence was undoubtedly due to the improved and still improving hygienic conditions under which the poor of London exist. Craniotomy was required in only fourteen cases out of the forty thousand, which sufficiently proved the rarity of pelvic deformity. The conclusions at which he arrived were: (1) As regards symphyseotomy he considered that the operation had not justified its existence, and he could not help thinking that in a few years the eminent obstetricians who had been advocating it would abandon its use. (2) Induction of premature labour, within certain limits, would always hold a recognised and useful position among obstetric operations. (3) And lastly we were forced to the conclusion, after a careful study of the latest figures which have been published on Cæsarean section, that it was a scientific and justifiable operation, and that it would be more widely resorted to in the future, as the science of obstetrics advanced, than it had been in the past.—*Medical Record, September* 30, 1899.

## 127.—HEMORRHAGE AFTER LABOUR.

By Denslow Lewis, M.D.,

Professor of Gynæcology in the Chicago Policlinic.

[From a clinical lecture by Dr. D. Lewis.]

If there is alarming hemorrhage from the uterus and if external manipulation does not induce retraction, the left hand will be passed into the uterus to remove anything that may be in the uterine cavity and to assist the external hand in securing proper retraction. If such a procedure does not result in the control of the hemorrhage the hand is withdrawn from the uterus into the vagina and the fingers are closed upon the palm. Against the firm, resisting surface formed by the closed fingers and the ball of the thumb of the left hand now in the vagina, the external hand forces down the body of the uterus and produces direct compression upon the bleeding surface of the placental site. There is no possibility of retention of blood clots, for they are squeezed out through the cervical canal. There is no injury to the uterus—no increased danger of infection. There is an empty uterus and the uterine walls are forced together. If then your efforts to secure uterine retraction fail, compress the uterus and hold it compressed until the hemorrhage ceases and there is no danger of relaxation when the hands are moved. It is well to add a few words about hemorrhage when the retraction is good. The hand on the abdomen may feel a retracted uterus and still there is severe hemorrhage. Aside from the possibility of uterine rupture and lacerations of portio vaginalis, vaginal walls, perineum or clitoris, all of which we have considered, it may happen that the uterus is turned inside out, that inversion has occurred. Sometimes there is also prolapse, and the inverted uterus may protrude from the vulva.

Our work in these cases of serious hemorrhage is not always finished when the bleeding has been controlled. There often remain the effects of severe loss of blood, and these effects may be fatal or may favour serious consequences as a result of the debilitated condition of the patient. About one-thirteenth of the weight of the body is blood. The average woman may be said to have about ten pounds of blood. If there is a loss of about one-fourth of the blood in the body, that is a quart, or two and a half pounds, the blood-vessels contract and the blood pressure remains nearly the same. The symptoms may not be serious. If more than one-half the blood in the body is lost, the patient usually dies. Between these limits the symptoms of prostration are well marked. There is faintness, dizziness, dimness of vision, dyspnœa and the extremities are cold. The patient is in danger and will often die unless there is an increase of the quantity of fluid in the blood vessels. I do not say an increase of blood, for experience has shown that a salt solution may be injected into a vein or the tissues, and the result is as good as if actual transfusion had been practised. In Dr. Bacon's apparatus a tube is attached to a bottle, very much like a fountain syringe. There is a glass Y with small tubes attached which permits an injection in two places at once. There are hypodermic needles fitted to the extremities of the small tubes. When the apparatus is used, the salt solution is made by dissolving an even teaspoonful of salt in a pint of water. The solution is sterilised by boiling, and when it is cooled to about the temperature of the body it is put in the bottle which has previously been sterilised. It is then allowed to flow through the tubes, and while it is flowing the needles are inserted into the thighs, between the shoulders or just under the breasts, the parts, of course, having been cleaned by washing with an antiseptic solution and with alcohol. The flow of the saline solution should be gradual, but may be quickened by raising the bottle. Gentle massage facilitates its absorption so that in ten or fifteen minutes a quart can be easily injected. Bacon tells us that he has injected three quarts with the best results within twelve hours after a severe hemorrhage.

The principle, as I have said, is to replace the lost fluid. In mild cases an enema of hot water may be given with the intention of having it retained. It is immediately absorbed by the intestine and the pulse improves in a few minutes. If a good result is not at once apparent, and in cases of excessive hemorrhage, it must be remembered that a marked reduction of the amount of blood in the body is dangerous, and that we must increase the quantity of fluid and not necessarily the blood corpuscles. Hypodermoclysis will then be practised with the apparatus I have shown you or by an improvised apparatus made with a hypodermic needle and a fountain syringe. If the result is not satisfactory it may be well to resort to intravenous saline transfusion, which is done by means of a small glass tube fitted to the tube of a fountain syringe. The median basilic vein is exposed and two probes are put under it to isolate a small portion. Ligatures are sometimes used in place of probes. The distal ligature is tied and an incision is made in the vein into which the end of the glass tube is inserted and secured in place by tying the proximal ligature. If probes are used, the vein is slightly raised on the probes and cut into. The glass tube is inserted, pointing upwards, of course, and the upper probe is removed. The saline solution then enters the circulation, and its flow is regulated by raising or lowering the fountain syringe.—*Clinical Review, October*, 1899.

## 128.—RUPTURE OF THE PUERPERAL UTERUS.

By Dr. James F. W. Ross, Toronto.

The author said that it is well known that rupture of the uterus might occur before or during labour. To diagnose a rupture of the uterus before labour was extremely difficult. It is a subject about which very little is known. The cases under discussion were not those before labour, but those occurring at the time of labour. Every practitioner should be familiar with the symptoms of this condition, so as to be able to recognise it at as early a date after its occurrence as possible. He then mentioned the different causes of rupture of the uterus, which are well known. He stated that the question as to whether rupture of the uterus occurs more frequently in the first or in subsequent labours is still one that has not been settled. Some authorities claim that rupture of the uterus is more frequently met with in primiparous cases than in multiparous ones; others claim it is more frequently met with in multiparous than in primiparous cases. Some state that rupture of the uterus may take place before the membranes have been ruptured. He considers that the duration of labour has a great deal to do with the production of rupture of the uterus, as the organ seems more prone to tear after its structure has become impaired by continual and prolonged contraction. The fundus is less frequently ruptured than the body, and the body less frequently than the cervix. The posterior wall of the lower segment seems to be the commonest site of rupture, and the tear is generally found to run toward the left. These tears usually extend over a distance of three or more inches. He considers that cases of rupture of the uterus might be divided into four groups: (1) Those which are beyond hope from the first, that have the usual classic symptoms of rapid pulse, dyspnœa, præcordial uneasiness, nausea, vomiting, and cold perspiration. (2) Those cases that have, owing to delay, passed beyond the operable stage and have become ill with commencing septicæmia and peritonitis, the peritonitis and septicæmia drawing attention to the case, and this extra attention revealing the fact that rupture of the uterus has been present without giving rise to early symptoms to indicate its existence. (3) A class of cases in which rupture is not immediately fatal, in which it is early recognised, and in which the patient is in good condition for operative interference. (4) A class of cases that may occur in which rupture is never recognised, but in which septic symptoms develop without any evident reason. In a case in which a very rapid pulse follows a fairly severe labour and peritonitis sets in, rupture of the uterus must be considered when endeavouring to discover the cause of the abnormal course of the puerperium.

Intraperitoneal hemorrhage can be diagnosed by percussion in the loins. The author stated that he had diagnosed intraperitoneal hemorrhage in this way on several occasions. The percussion sound may change as a consequence of the changed position of the clot, and when it does change, it does so slowly. He stated that since reading a paper before the Buffalo Academy of Medicine in January, 1898, he had met with two cases of rupture of the uterus. These were related in detail. One case occurred at full term, and the other during the fourth month, the latter having been produced by an attempt to empty the uterus. In each case, drainage of the peritoneal cavity through the rupture and frequent irrigation were adopted. Each patient recovered after a long-continued illness. The rupture was not recognised in either case in time for interference by cœliotomy.

In summing up the treatment of these cases he considered it necessary to treat the cases according to the class to which they belong. In the first class the patient is practically moribund before the physician in charge can call counsel. In the second class, in which there were no symptoms to indicate that rupture of the uterus had occurred, the treatment must vary from that carried out in Class 3. The treatment in the second class was that indicated in the cases reported, viz.: thorough drainage and thorough cleansing from below. He considers that an abdominal operation under such circumstances would be unfavourable and injurious to the patient. Already adhesions have formed to protect the general peritoneal cavity, and these must of necessity be broken down and increase the risk. In the third class of cases in which rupture is recognised, in which the patient is not moribund from shock and hemorrhage, there can be but one line of procedure to carry out, viz.: cœliotomy, thorough inspection of the part, removal of blood clot from among the intestines, thorough stoppage of hemorrhage from the wound either by approximating sutures or gauze packing, and the establishment of thorough vaginal or abdominal drainage, or both. In the opinion of the author, suturing the rent was scarcely called for, as by this procedure the operation is unnecessarily prolonged, and the length of time consumed by such an operation is of importance. Anyone who has had experience with this tragedy of the lying-in ward must have noticed that the edges are so bruised as scarcely to hold a suture. To pare them off means increased hemorrhage and increased delay. He prefers packing with gauze, and is satisfied that the uterus afterward becomes perfectly normal. Hysterectomy under such circumstances must prolong the operation, increase the shock, and unsex the patient.

In the treatment of the fourth class of cases, or those unrecognised, the question of improvement in means of diagnosis must be considered. How can it be discovered when it presents no symptoms? When inflammation and septicæmia are present, it is too late to make a diagnosis. He has not the fear of the exploration of the interior of the uterus ordinarily taught by the text-books. He does not consider this a sort of sacred chamber into which the finger of the accoucheur should seldom be put. He believes that in all cases of septicæmia following labour, in which there is a greatly increased pulse, without any apparent reason, the interior of the uterus should be thoroughly explored with the finger to ascertain the absence or presence of a rent.—*Journal American Medical Association, October* 14, 1899.

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## 129.—CHRONIC INVERSION OF THE UTERUS REDUCED BY AVELING'S REPOSITOR.

By John B. Hellier, M.D. Lond.,
Lecturer on Diseases of Women and Children, Yorkshire College;
Surgeon to the Hospital for Women and Children, Leeds.

Chronic inversion of the uterus is one of the rarest of its morbid conditions. Acute inversion is so rare that it occurred but once in 190,800 labours at the Rotunda Lying-in Hospital, Dublin, and not once in 250,000 labours at Vienna. But for acute puerperal inversion to become chronic it must remain unreduced, the patient must survive the danger of a speedy and fatal termination which this involves, and involution must take place. So excessively rare is such a sequence of events that a specialist may see tens of thousands of gynæcological cases without meeting with a single instance. Hence no man can accumulate much personal experience of the treatment of chronic inversion, and it is important that every case should be published. [Dr. Hellier then relates a case in a woman, aged 24 years, in whom the inversion occurred six months after labour.]

Aveling's repositor was applied in accordance with Dr. Aveling's directions. The cup employed had a diameter of one and a half inches and it held its place well without any packing. On the next day the uterus was unreduced and the instrument was re-applied. After 51 hours of application the fundus was found to have gone up. The cup of the repositor followed the fundus and was firmly grasped by the cervix. The attempt to remove the repositor caused so much pain that ether was again administered and the repositor was withdrawn by tilting the cup and using a blunt curette as a button-hook. It was now found that there was still partial inversion of the fundus which felt exactly like a polypus within the os internum. On making steady digital pressure on the tumour and counter-extension on the cervix with three pairs of vulsella, reduction was easily completed. A No. 20 Hegar was passed into the uterine cavity which now measured three and half inches. The cavity was well washed out and was packed with iodoform gauze for 24 hours. For two or three days there was slight rise of temperature and some abdominal tenderness, with some discharge of an offensive nature from the endometrium. Later the uterus measured two and a half inches and the patient was practically well, but the discharge continued to be offensive for some days. The inversion was thus reduced after 29 weeks' duration. The amount of pressure used was about three pounds. The general condition of the patient on leaving the hospital was much improved.

The history of this patient bears out the statement that if a case of inversion survives the stage of involution it may give little trouble till menstruation is re-established and then it causes danger from "flooding." Details of the history of onset are wanting. Spontaneous inversion seems to have taken place. Probably the reposition made was not quite complete and relapse occurred by subsequent uterine action. The diagnosis of such a case of complete inversion is easy if one remembers to make a diagnosis. But the inverted uterus bears such a close likeness to a polypus that some operators have cut it off first and made their diagnosis afterwards. But the diagnosis of partial inversion must, I am convinced, be exceedingly difficult in some cases. When in my case the uterus was half reduced it was exceedingly difficult on bimanual examination to recognise the cup of inversion, and if I had not seen the uterus completely turned inside out I should have found it very hard to distinguish it from a case of polypus uteri with partial inversion, and I am not surprised to read that very competent men have sometimes mistaken the one for the other.

There can be no doubt that the treatment for chronic inversion is sustained elastic pressure. There seems to be a growing opinion that amputation of an inverted fundus or panhysterectomy for the same condition is hardly ever necessary. Dr. Aveling's repositor seems to be the very best instrument for the purpose. Dr. G. E. Herman goes so far as to say that it has not been known to fail and that an inverted uterus ought never again to be amputated. How far such a universal negative can be sustained I cannot venture to say, but it is certainly one of the triumphs of surgery that a condition which at one time was considered incurable except by amputation is now capable of such successful treatment that the only question is whether the mutilative operation is ever justifiable. If in any case all other methods of reduction fail I think that a trial should be made of Küstner's operation. As I cannot find a clear account of this in modern English text-books a brief abstract of Küstner's description may be interesting. He has performed it, so far as I know, but once. It was then successful in a very obstinate case. (1) He made a transverse incision through the posterior vaginal cul-de-sac into the pouch of Douglas. (2) He inserted his index finger, sought for adhesions, and tried to reduce the inversion, but unsuccessfully. (3) He made an incision in the middle line from the surface of the posterior wall of the uterus right through to the peritoneum, using as a guide the index finger inserted into the cup of the invertion. The incision began four-fifths of an inch from the extreme fundus, was four-fifths of an inch long, and ended four-fifths of an inch from the os externum. (4) He then found it easy to reduce the inversion. (5) By vulsellum forceps he forcibly retroflected the uterus and drew it into the vaginal incision so as to enable him to suture the uterine wound from the peritoneal side. (6) He then closed the vaginal wound. The patient did well. This operation seems worthy of trial if necessity arises.—*The Lancet, July* 15, 1899.

## 130.—THE TREATMENT OF FEVER FOLLOWING DELIVERY.

By Herbert R. Spencer, M.D., B.S., F.R.C.P.,

Professor of Obstetric Medicine in University College, London ; and Obstetric Physician to University College Hospital.

[The following is taken from Dr. Spencer's remarks in introducing the subject before the British Medical Association, 1899 :]

The most important part of the treatment of puerperal fever consists in the prophylaxis. Although much is still unsettled in the scientific aspect of the subject, the value of prophylactic treatment has been conclusively proved by abundant clinical experience. Here I venture again to recommend the routine examination of every patient towards the end of the pregnancy. Only by this means can contracted pelvis and tumours and purulent foci be discovered, and measures taken to prevent the dangers to which they may give rise during labour. It is most important to avoid all unnecessary injury during labour, by too frequent examinations, by unnecessary forceps operations, or, on the other hand, by allowing the labour to be unduly prolonged. Abdominal palpation should to a great extent take the place of vaginal examination. Careful management of the third stage of labour is of the highest importance, and particularly is it necessary to make sure that no placenta or membranes or clots are allowed to remain in the uterine cavity. An equally important feature in the management of the labour is the thorough disinfection of the hands and vulva. The experiments of Döderlin have shown that in normal cases vaginal injections, so far from preventing the growth of micro-organisms, rather favour it, but in every case of labour the vulva should be washed with soap and water, rinsed with water, and swabbed with 1 in 1,000 perchloride of mercury. The hands (of which the nails should always be short), wrists, or forearms should be thoroughly scrubbed with soap and hot water, rinsed with water, and soaked in 1 in 1,000 perchloride of mercury solution (in place of this some prefer alcohol). The safest lubricant is a solution of perchloride of mercury in glycerine of the strength of 1 in 1,000; instruments, if kept bright, require no lubricant, but should be immersed in a solution of carbolic acid (1 in 20). All instruments should be of metal or glass, and should be disinfected by boiling. I would add a word on aseptic clothing. The ideal clothing is white washable material. In private practice this is not always available, and a compromise may be effected between it and the ordinary black coat by drawing up the sleeves and pinning round the forearm a clean linen towel. The question here presents itself as to whether it is necessary for a doctor who has attended a case of puerperal fever to abstain from practice for a time. Those who give the advice that it is necessary are generally those who are themselves engaged daily in examining septic cases. Mere abstention from practice will not prevent the carrying of infection when practice is resumed; thorough disinfection will immediately enable a practitioner to attend another lying-in woman with safety.

As regards the actual treatment of puerperal fever, when it has arisen, it is necessary, in the first place, that a thorough examination of the patient and of the uterus be made. The necessity of examining the uterus in these cases has been insisted upon by Dr. Cullingworth; and although my experience does not coincide with his as to the frequency with which portions of the placenta are found in the uterus in these cases, and the researches of Bumm show that more harm than good is likely to result from removal of minute adherent particles, yet I am convinced of the advisability of carrying out an intrauterine examination in nearly every case. In many cases, apparently almost hopeless, as a result of this examination I have removed putrid portions of placenta with recovery of the patient, and in three cases I have removed fibroid tumours by enucleation with an equally satisfactory result. In order to avoid infecting the hands in examining a septic case I can strongly recommend the wearing of rubber gloves, which I have used for the last four or five years in examining syphilitic and septic cases, and in extraperitoneal operations. The gloves I have used are the ordinary post-mortem gloves, but the thin rubber gloves which have lately been made in Germany are far preferable for the purposes of examination, as they scarcely interfere with tactile sensation, and cause less discomfort to the patient than the uncovered finger. Speaking generally, a septic substance found in the uterus should be removed, but there are some rare exceptions, of which I may mention strongly adherent pieces of placenta unattended by severe general symptoms (though often by high fever and foul discharge) ; these cases will often do better if the elimination of the substance be left to nature than if violent and generally ineffectual attempts be made to remove them. But, speaking generally, the uterus should be completely emptied by the finger, occasionally by large, blunt-ended forceps, and, I think, never by means of the curette after labour at full term.

I have found post mortem the uterus so soft that the finger and thumb could pulp the organ like a fatty liver, and I have known the finger to be forced through the wall of the puerperal uterus during life ; how much greater is the danger associated with a sharp instrument like the curette ? After emptying the uterus, in all cases where there is a foul discharge I usually irrigate the uterus once with a solution of iodine (1 drachm of tincture of iodine to the pint), or a weak solution of perchloride of mercury or carbolic acid, or boracic acid, or by a large quantity of solt solution. Continuous irrigation of the uterus (first recommended by Schücking in 1877) is certainly useful in cases where some adherent tissue has to be left behind. Nevertheless, it is very irksome to the patient, and the tube is apt to cause by its pressure troublesome sores, and has even been known to perforate the uterus (see Pinard and Wallich), so that I have almost entirely abandoned continuous irrigation, and even oft-repeated irrigation, unless beneficial results of the first irrigation are marked. The best intrauterine tube is, I think, Budin's catheter made of glass. In order to clean the septic endometrium Upshur has advised the employment of peroxide of hydrogen, which is very useful in cleaning up sloughy wounds, though I have no experience of its use in the uterus. All forms of intrauterine irrigation and even vaginal irrigation are attended with some risk—risk of injury by the antiseptic employed, risk of perforation of the uterus, and, particularly, the unavoidable risk of embolism, of which I have seen two cases within the last twelve months, which gave rise to the greatest anxiety for a few hours after its occurrence, though, somewhat to our surprise, they both recovered. In order to drain the endometrium, iodoform gauze has been employed ; this also is not unattended with the risk of air embolism. I rarely employ it for draining the puerperal uterus, inasmuch as discharges are apt to be more copious than the iodoform gauze can well deal with.—*British Medical Journal, October* 14, 1899.

## 131.—THE TREATMENT OF ECLAMPSIA.

By Dr. De Lee.

*Treatment during Pregnancy.*—In a given case of eclampsia, when labour has not yet begun, try to tide the patient over the present danger by the means given, and induce labour after the tendency to convulsions is past, or wait till labour comes on naturally. In the modern trend toward operative measures, those successful cases, not a few, where expectancy and medication lead to a favourable termination are being ignored. Theoretically, if one should induce labour when eclampsia is threatening, one should end the pregnancy when it has broken out. Clinically, however, one can often overcome the convulsions, the fœtus may die and be expelled, and, what is not so rare that it may be neglected, the patient may go on to term, and have a living child. If the convulsions are at all severe, labour usually comes on without much delay. The dangers of injury and shock in the rapid dilatation and emptying of the uterus, and the many irritations to the already overwrought nervous system made by it, may more than outweigh the advantages of the immediate termination of pregnancy. Should medicinal treatment have no effect, the convulsions getting more frequent, longer, harder, or the pulse getting more frequent with a rising temperature, induce labour. Puncture the bag of waters first. In a third of the cases the convulsions cease, in another third they become less strong, but in the rest they do not improve. Labour usually comes on at once, especially if the fits are violent. They stimulate the uterus, and labour pains are often strong. If necessary to hasten the labour, dilate the cervix with Barnes's bag or the colpeurynter.

*Treatment during Labour.*—All authors are agreed that during labour one should terminate the process as soon as possible. The greatest differences exist, however, in regard to the amount of force to be employed. Accouchement forcé should almost never be used. By this is meant the rapid dilatation of the cervix, incising it if necessary, and the immediate extraction of the child. Dr. De Lee says he cannot agree with those who say that it is possible safely to stretch, tear, and cut the cervix open and extract the fœtus in thirty minutes to an hour. Unless the upper part of the cervix is effaced—that is, drawn up into the body of the uterus (carrying the circular artery with it)—the dangers of rapid dilatation by any of the means employed are great. Laceration of the cervix, even to the peritoneal cavity, hemorrhage even fatal, later sepsis, have occurred often enough to warn against this procedure. When the cervix is effaced, and the os begins to dilate, the case has an entirely different aspect; then the dilatation by the hand or incision is comparatively without danger. It must never be forgotten that stretching cannot replace the natural process of effacement and dilatation, and that it is therefore in the highest degree desirable, in cases where operative delivery is to be made, to wait until the cervix is thinned out—that is, shortened—and the dilatation at least beginning before it is attempted. The circular artery is then out of reach, and the incisions, as given by Dührssen, or the lacerations, are not so dangerous. The only means to produce this effacement of the cervix is the uterine action. Stretching from below or pulling rubber bags through will not do it, except insomuch as they produce uterine contractions. In cases, therefore, where rapid delivery is indicated, the writer uses Barnes's bags and the colpeurynter to dilate the cervix, as they at the same time evoke pains and hasten the shortening of the cervix. Manual dilatation of the cervix is accomplished by a method similar to that described by Edgar, of New York, which the writer has used for five years with success, varied by a few failures. The cervix will sometimes tear under the manipulations so that recourse must be had to incisions, or it will not give way to any justifiable force, when the scissors may again be necessary. The delivery is best accomplished by the forceps. Version is undesirable in eclampsia. If the child is dead, by all means perform craniotomy. If there are perineal or vaginal tears, repair them; if cervical, leave them alone, unless hemorrhage gives the indication. The delivery of the placenta is as usual. If contraction and retraction of the uterus are good, postpartum hemorrhage is not to be feared. Do not tampon the uterus if at all avoidable.

The child is not seldom asphyxiated; it may be narcotised by the drugs given the mother, and it may have convulsions similar to those of the mother. It is well to remember that in eclampsia labour is usually rapid, and the patient being unconscious, the baby may be born unexpectedly under the bedclothes. It is well to leave the case to nature if the labour is progressing rapidly, if the convulsions are not too severe, if the colour of the patient is not cyanotic, if the pulse is good, the fever not above 102°, and there be no signs of œdema pulmonum. As soon, however, as the cervix is completely dilated there is usually no need to wait longer, and the delivery may be completed under chloroform. Only in the gravest emergency should forcible means to empty the uterus be employed. Cæsarean section has no place in the treatment of eclampsia unless the woman is about to die and the child is alive. From the above it may be seen that Dr. De Lee leans toward an expectant plan of treatment of eclampsia ; but it will be seen also that under proper indications on the part of mother, active, decisive, operative measures are advised.

*Treatment during the Puerperium.*—Those measures given above—that is, those appropriate to all cases—come into play here to the fullest extent. The eliminators must be stimulated to the full safe limit. Narcotics must be used more sparingly now, unless the convulsions are very violent, as it seems that they increase and prolong the coma, and lock up the secretions. During the labour where the irritation from the genitals is being kept up, narcotics are necessary, and we must take their bad effects with the good. No drug is an unalloyed good. Saline solution may be given in large doses hypodermically, and oxygen, which is supposed to aid elimination by the lungs. Dr. De Lee has used oxygen in only one case—puerperal eclampsia—but there was no effect, not even on the cyanosis. Veratrum viride has been much extolled as a specific for eclampsia, and it did for a time take that part of the place of bleeding that chloroform did not usurp. Now bleeding is taking its place again to the disuse of chloroform, and veratrum is being less used than it was. It is said that by this drug the pulse may be kept at 60, and then no convulsions can occur. Dr. De Lee says he has had but little recourse to this drug, but in one case the fits recurred even while it was being pushed to its physiological effect. It may be used with other remedies. In general the treatment of this grave accident is much the same as the treatment of any other disease—not one drug or course of procedure for all cases, but a proper individualisation of the cases and a careful application of the method suited to each.—(*Obstetrics, August*, 1899).—*From abstract in Therapeutic Gazette, October* 15, 1899.

## 132.—THE DIAGNOSTIC VALUE OF PAIN IN GYNÆCOLOGY.

By Dr. Richard Lomer.

In the American *Journal of Obstetrics* for April and May, Dr. Lomer discusses this subject, bringing forward the great difficulty of distinguishing real pain due to existing pelvic disease from hysterical pain. He shows that in many cases the pain is really seated in the abdominal wall, and can be elicited by pinching the skin or pricking it with a needle. He also holds that where hyperæsthesia of the skin is present other hysterical stigmata will be found, such as anæsthesia of the conjunctiva or of the soft palate, and narrowing of the field of vision. These other stigmata are not generally complained of, but will be found on examination, when hyperæsthesia of the abdominal skin is present. These cases come under the head of Charcot's *hystérie normale.* Three degrees of hysteria are mentioned : (1) Normal hysteria—cases which would not be called hysteria but for the above-mentioned stigmata ; (2) hysteria due to trauma, hemorrhage, chlorosis, diseases of the sexual organs, fright, &c. ; (3) grand hysteria—convulsions which start from the hysterogenetic zones. Twenty-seven cases are given, divided under the two following heads ; (1) Those in which there was no gynæcological disease that could be brought into relation with the pain, and (2) those in which laparotomy was performed for the relief of the pain. The first class of cases includes patients who, not being thought hysterical, may be subjected to useless and unnecessary operations, and in whom the true hysterical cause will be found if hysterical stigmata are looked for. They frequently have dysmenorrhœa, the nervous pain even continuing after the flow is well established. They have psychical peculiarities, will run the risk of any operation for the relief of their pain, and have exaggerated notions of everything connected with their feelings.

In the second class of cases laparotomy was performed because of co-existent real plevic lesions, without, however, any relief of their pain, In some of them the hysterical stigmata were looked for, and relief given by the application of the weak galvanic current, with the anode over the seat of pain. The usual seat of the abdominal hyperæsthetic areas is to the right (or sometimes the left) of the linea alba, a little higher than the ovarian region.

The special therapeutic remedies are : (1) Weak galvanic currents, with the anode to the seat of pain. (2) "Suggestion" —a most important remedy, depending much on the personality of the doctor. (3) Removal from friends, and treatment in an institution. (4) Plenty of food and excercise. (5) Removal of any real gynæcological condition which may cause pain, without any promise that the hysteria will be removed at the same time. (6) Iron, in the form of Blaud's pill, the most important drug.—*Abstract in Treatment, October* 26, 1899, *p.* 524.

## 133.—KRAUROSIS VULVÆ.

By J. M. BALDY, M.D.,
Professor of Gynæcology in the Philadelphia Polyclinic, &c.; and
H. L. WILLIAMS, M.D.,
Instructor in Gynæcology in the University of Pennsylvania, &c.

[From Drs. Baldy and Williams' paper.]

Clinically, the picture of this disease is most striking. The first symptoms noticed are usually those characteristic of pruritus, which consist of an intense and more or less progressive itching and burning of the vulva. In some cases the affected tissue is excessively hyperplastic and dyspareunia develops early. The skin is frequently discoloured, and small red spots appear on the surface. Some time after these symptoms are noticed a peculiar shrinking of the superficial tissue of the vulva begins to take place. Discoloured spots appear which are hyperæsthetic. The skin becomes dry and whitened, and often covered with a rough and thick epidermis. The disease may be unilateral or circumscribed, but usually the tissues of the labia majora, the nymphæ, the area about the clitoris and urinary meatus all become more or less involved, while the skin about the anus is frequently affected. As the disease advances the small labia gradually disappear, fusing with the labia majora, and the skin becomes shiny and drawn smoothly over the shrunken clitoris, which has apparently retracted behind the skin, and is now only indicated by a small depression instead of a prominence. Underlying vessels are frequently seen through the transparent epidermis, and cracks appear on the dry surface, which extend often into the corium. A sensation of drawing and shrinking of the vulva is usually experienced, and the vaginal orifice becomes gradually narrower and more and more contracted, until frequently the little finger can scarcely be introduced, and all sexual intercourse becomes a physical impossibility. When this condition has been reached the pathological process is arrested, the subjective sensation of shrinking passes away, and the symptoms of pruritus, usually prominent only in the earlier stages of the disease, are no longer experienced. But the shrunken and contracted vaginal orifice still persists, and is never spontaneously restored. That the disease occurs but rarely is shown by the fact that Fleischman, who was especially on the watch for this condition in Breisky's clinic, in Prague, found only eight cases in 1,550 patients. On the other hand, Lewin, at the Charité, observed no case among 70,000 to 80,000 patients.

After a careful review of the literature and a thorough microscopical study of our own case we would ascribe to kraurosis an inflammatory origin, modifying but slightly the theories of Veit and Martin. While it is possible that primary lesions in the trophic nerve-filaments, or the ganglia whence they spring, may be the cause of the local manifestation, this is purely a matter of theory, with no evidence whatever to support it, and seems to us unreasonable and not borne out by the pathological investigations. Our own opinion is that the cause is entirely a local one. Pruritus is such a constant symptom in the beginning of the disease in nearly all instances that its etiological bearing cannot be ignored, and we agree with the hypothesis of Veit, that the itching induces scratching, which in turn sets up a chronic inflammatory condition, with the formation of cicatricial tissue in the deeper layers of the derma and subcutaneous strata, shrinkage and contraction of the vulva, and atrophy of the skin surface. We, however, recognise the fact that the larger number of cases of pruritus apparently do not degenerate into kraurosis; that there is, therefore, some hidden impulse which causes further changes than ordinarily take place with the symptoms in this disease, with which impulse we are as yet unfamiliar, seems likely. This element may be either constitutional or local. When once this element is brought into play in the presence of pruritus we would go still further and be more explicit in our explanation as to how this result is brought about. As is well known, the skin surface is the constant habitat of various micro-organisms capable of producing inflammation and even suppuration. On rubbing, or scratching, irritation is produced and the normal cellular resistance impaired. The micro-organisms are now able to set up a low-grade inflammation which easily extends into the corium and underlying subcutaneous tissue. The skin surface may, however, be broken and the micro-organisms introduced from beneath the finger-nail or from the clothing. The corium and underlying subcutaneous stratum, rich in elastic tissue and unstriped muscular fibres, become sclerotic and hyaline in consistency, lose their elasticity, shrink and contract. The blood-vessels are pressed upon and their calibres gradually lessened and destroyed, while the nerve-filaments are rendered first hyperæsthetic and then succumb. Primary hyperplasia, the result of irritation, gradually gives way to atrophy, until the entire thickness of the skin above the areas of scarred tissue are involved. When the entire area has become atrophic the progress of the disease is arrested and the condition remains stationary, and the vaginal orifice narrow and contracted, but no further symptoms are manifest.

The atrophic process involves all the glands and appendages of the skin, so that the dry, glossy surface, dead-white appearance, and tendency to crack are readily accounted for.

When this stage has been reached it is readily seen that the only treatment that can be of any avail is the total removal of all scar tissue and an approximation of the edges of the healthy skin and mucous membrane. The treatment of this condition has been divided into palliative and curative. The former is simply to relieve the subjective symptoms, which at times are excruciating. Carbolic acid and cocaine afford temporary relief, but the symptoms return soon after with renewed severity. Tait mentions the soothing effect of a solution of neutral acetate of lead in glycerine, placed on cotton between the nymphæ. Johnstone advises a salve of yellow oxide of mercury in the early stages. Pure nitrate of silver applied repeatedly lessens the suffering, but has no effect upon the progress of the disease. Hot water often affords considerable temporary relief. Heitzmann has practised curettement and scraping of the diseased tissue, but the result has been entirely unsatisfactory and the process a long and painful one, requiring very many repetitions. Martin was the first to suggest complete excision of the diseased tissue as a curative measure, and applied the method in five cases, four of which were permanently cured, and one experienced a recurrence. Others have since followed the same method, the results obtained by Reed, and published in the article above referred to, being particularly gratifying. To be completely successful total excision of the diseased tissue should be accomplished. If this is done the prognosis is most favourable. Recurrence has occurred in some cases when this was not obtained and when the operation was performed before the process of atrophy had been entirely accomplished.—*American Journal of Medical Sciences, November*, 1899.

## 134.—THE EROSIONS OF THE CERVIX UTERI.

By F. H. DAVENPORT, M.D., Boston.

[The following is taken from Dr. Davenport's paper :]

Clinically I meet with two forms of erosion, one associated with and following endocervicitis, the other not. In the first form the inflammation of the lining membrane of the cervical canal is the primary factor. The erosion develops later. It is at first perhaps an ectropion, a hypertrophy and prolapse of the cervical mucous membrane, a condition which I am sure is often mistaken for erosion. But if the process stops here no erosion occurs, and in many cases it is so limited. Under treatment the hypertrophied and congested membrane shrinks and is withdrawn into the cervical canal. In some cases, however, an erosion develops. Surrounding the ecropion is a zone of red, angry looking tissue, dotted here and there with bright red points, slightly raised above the level of the cervix and covering a space from the size of a dime to a quarter of a dollar. The essential factor which characterises this class of cases is the antecedent and accompanying endocervicitis. This is clearly demonstrated by the history and by the appearance on examination. The second form of erosion that we find clinically differs from the one I have described in that so far as the appearances are concerned there is no endocervicitis. The patient does not complain of any discharge, nor on examination can any amount of mucus be seen coming from the cervix. The erosion does not differ from the first form except that it is apt to be more angry looking, and the papillæ are more prominent. In my experience it has been more often associated with an anteflexion of the uterus where there is a conical cervix than is the first variety. The patients are apt to be of a neurotic type, or else those who have recently been under an unusual nervous strain. If I may generalise from a moderate number of cases, I should say that the symptoms were more distinctly general in character than local; not that there are no local symptoms, but that they are overshadowed by those general in character, which are also largely reflex. It would follow as a corollary of this proposition that the essential factor back of this form of erosion is the state of the general health, and this I conceive to be the case. The first form is secondary to a pre-existent disease of the cervical canal. The second form is associated with a condition of the vital forces, and is in many cases an index of the state of the health of the patient.

The history of the second class leads naturally to the proposition that, inasmuch as this form is either secondary to, or intimately associated with, the condition of the nervous system generally, our measures of relief should be directed to the building up of the nerves, with the expectation that with an improved condition of the nervous system the local leison will improve as well. This does not always follow. It must have been within the experience of you all to have had cases where an affection which was clearly secondary in its appearance, assumed so much importance in the production and keeping up of symptoms, that it either overshadowed the primary affection or completely neutralised the attempts at building up the general health. Erosions slight in appearance will yet at times assume an importance which imperatively demands that they should be relieved, before any permanent state of health can be attained. For this reason all cases must be carefully analysed. In a certain proportion the local treatment may be omitted entirely. If the general health is looked after, the erosion will keep pace with the improvement of the nervous system, and will gradually disappear. Another contingent of cases will demand local treatment. I must confess to a feeling of scepticism, of almost hopelessness, as regards the effect of local applications on these erosions of the neurotic type, if I may so call them. Iodine, various powders, such as oleate of zinc, ichthyol, antiseptic washes, glycerine tampons, have all, at times, proved useless in my hands. Perhaps the one remedy which has given me the best results is a weak solution of nitrate of silver painted over the surface of the diseased membrane. A solution of nitrate of silver, from five to fifteen grains to the ounce, according to the sensitiveness, seems to me not only to promote healing, but to have at the same time a benumbing effect upon the pain. In these cases I avoid the use of the glycerine tampon, which seems to me a little harsh. Many cases, however, will fail to be improved by these applications, and for these I am more and more inclined to perform a simple operation.

All of us have undoubtedly seen cases of erosion where there was a good deal of hypertrophy of one or both lips, which so nearly simulated a laceration of the cervix that only the absence of any history of pregnancy made the diagnosis sure. The natural thought in considering treatment of such cases is to operate as for a laceration, and a number of cases are on record where this has been done. I have seen several such cases myself, and it seems to me that this principle might be extended further, so as to embrace a large number of cases, even those without much hypertrophy. A thin layer of the diseased mucous membrane can be removed from the cervix without any great loss of tissue, and the raw surfaces united so as to restore the vaginal surface of the neck of the uterus to its natural state. It is a simple operation, and, in my judgment, and I think in the opinion of many patients, a preferable course to weeks or months of uncertain local applications. I have done this several times, and the results have been very gratifying. Even this, however, is no safeguard against a return of the trouble, as was demonstrated to me by a case in my own practice. It will be seen from what I have said, that my experience with minor forms of treatment for erosions of the cervix has led me to be rather pessimistic as to their value. At the same time, it will be recognised from what I have said that I do not consider them the innocent or simple affairs which many I am sure do. I believe that they have a marked influence upon the nervous system of delicate women, and that something should be done for their relief. In order to attain better results than I can by applications, and in many cases by attention to the general health, I am more and more inclined to treat these cases by operation.—*Boston Medical and Surgical Journal, October* 12 1899.

## 135.—TWO CASES OF DOUBLE TUBERCULOUS PYOSALPINX.

### By J. H. Targett, M.S.

[These specimens were shown at the Obstetric Society, May, 1899 :]

These cases were under the care of Mr. Rutherford Morison, of Newcastle, and their clinical histories were very similar. They were both middle-aged women, married, but sterile. Their cause of complaint was dysmenorrhœa and dyspareunia ; the menstrual periods were regular, though profuse, and there had been no intermenstrual hemorrhage. One of the cases had recently suffered from abdominal pain and tenderness, which was afterwards explained by the twisting of the pedicle of a dilated Fallopian tube. With this exception the patients had been free of pain or feeling of illness ; they were healthy in appearance, and there was no history of previous uterine disorders, gonorrhœa, or vaginal discharges. Inquiry failed to elicit a history of tubercle in either family, and the patients themselves presented no evidence of it. The specimens exhibited were removed by abdominal section. The larger pair of Fallopian tubes was filled with thick, putty-like contents, and may be described as follows :—The left tube is dilated into a large oval cyst, which measures, after contraction in spirit, five inches in its long diameter, and three inches across at the broader end. The surface presents some recent adhesions which are very soft and delicate, and are most abundant in the vicinity of the pedicle of the pyosalpinx, which is twisted. The cut surface of the pedicle shows the effects of torsion, and the tissues are much infiltrated with blood. On section the wall of the pyosalpinx is nearly a quarter of an inch thick, and is darkened by the extravasation of blood into its coats. The thickness of the wall is partly due to this blood, and partly to the presence of a thick layer of inflammatory tissue lining the cyst. The left ovary projects from the wall of the cyst, and its substance is much infiltrated with blood. Numerous corpora fibrosa and a few dilated follicles are seen on section. The right tube does not materially differ from its fellow in size and shape, but the wall is thin and almost translucent in places, which makes a sharp contrast between the two specimens. Apparently this difference is due to the changes resulting from the torsion of the pedicle of the opposite tube. The serous surface of the right pyosalpinx is free from adhesions, and its lining membrane is thickly studded with yellowish-white nodules the size of a pin's head or less, which are in the substance of the mucous coat. The cut surface of the uterine end of the Fallopian tube shows a similar yellowish-white thickening of its mucous coat. The right ovary is free from adhesions, is not attached to the dilated tube, and is normal in size. On section it shows many old corpora lutea. The pedicle of this pyosalpinx is not twisted.

The smaller pair of Fallopian tubes now exhibited likewise contained thick pus, in which granular pus-cells were easily recognised under the microscope. They form two banana-like swellings, unlike the retort-shaped cyst so characteristic of the common pyosalpinx. The abdominal ostia are closed from within (salpingitic closure) and the large fimbriæ are clearly seen stretching over the dilated end of the tube. In this respect these tubes differ from those above described. There are practically no adhesions on the surface, merely a few fine threads. The walls are remarkably thin, and therefore when emptied these tubes more closely resemble a hydrosalpinx than a pyosalpinx; yet the contents were unquestionably purulent. The interior was lined with an adherent layer of lymph and pus. The ovary and mesosalpinx on one side are normal, and in no way adherent to the pyosalpinx; the opposite ovary was not removed. Microscopical examination of the walls of the pyosalpinx in both cases yielded no histological evidence of tubercle, but transverse sections of the undilated uterine ends of the tubes showed abundant infiltration of the mucous membrane with grey and caseous tubercles, possessing well-developed giant-cell systems. The mucous coat in the dilated portions was in large measure destroyed, and replaced by inflammatory tissue in various stages of fibrosis.

*Remarks.*—The anatomical features of these dilated tubes, as revealed by operation, were no less remarkable than the clinical histories of the patients. For this reason the specimens were submitted to careful examination with the view of determining the cause of the pyosalpinx, which was by no means apparent. Mr. Targett called attention to the fact that active tuberculosis was present chiefly in the undilated portion of the tube, and that its existence might have been easily overlooked in a mere examination of the wall of the pyosalpinx, for there the tuberculous tissue had undergone fibrosis. He pointed out that this variety of pyosalpinx differed from that usually seen in the absence of adhesions, the large size and elongated shape of the distended tube, and the small degree of thickening of the cyst-wall. Though the abdominal ostium was closed, the fimbriæ remained unaltered on the surface of the dilated tube. Owing to the absence of adhesions the ovary and mesosalpinx were distinct, and there was an increased risk of twisting of the pedicle of the cyst. The fact that such a pyosalpinx is tuberculous in origin must now be recognised, and it was further interesting to note that in these cases no other evidences of tubercle were discovered, either on clinical examination or at the operation. Hence, a sporadic infection of tubercle may occur primarily in the Fallopian tubes as it does in a joint, and may remain thus localised for an indefinite period of time without becoming generalised, or even extending to the adjacent peritoneum.—*Transactions of the Obstetrical Society*, 1899, *vol.* 42.

## 136.—THE SURGICAL TREATMENT OF FIBRO-MYOMATA.

By Dr. Doyen, of Paris.

Dr. Doyen pointed out that uterine fibroids were far from being a benign affection, for besides the more frequent accidents, such as hemorrhage and pressure symptoms, grave complications were apt to supervene, the most important of these being phlebitis, albuminuria, intestinal obstruction, and malignant degeneration. (1) Phlebitis in these cases was of infective origin, the starting-point of the infection being the uterine cavity. (2) Albuminuria might occur without either the volume of the tumour or the tension on the abdominal walls appearing to be responsible; it was found not only with incarcerated fibroids but also with those that were mobile and even with pedunculated tumours. Albuminuria was therefore not a contra-indication to operation; on the contrary, it was often one of the most urgent of indications. The same might be said of serious hemorrhage leading to marked anæmia; removal of the tumour and ligature of the uterine arteries formed the best means of hæmostasis. (3) Intestinal obstruction was sometimes the direct result of pressure, but in most cases it was due to fibrous bands and adhesions behind the uterus. Doyen had known these to occur in several instances as the result of so-called "palliative" methods, such as electricity and interstitial injections of ergotin. (4) Malignant degeneration might take the form either of sarcomatous change in the myoma itself or of epithelioma of the cavity of the cervix or of the mucosa of the body of the uterus. The fact of the existence of a myoma was not necessarily an indication for operation; if the size of the tumour remained stationary the patient should be kept under observation and examined three or four times a year. But if it were increasing in size and inducing the complications above mentioned, operation became a necessity. The discussion should be framed with a view to the general adoption of a well-determined line of treatment and of a precise operative technique. He sought to demonstrate that his procedure of vaginal hysterectomy without preventive hæmostasis by anterior hemisection, on the one hand, and his procedure of total abdominal hysterectomy by subserous decortication of the inferior segment of the uterus on the other hand, constituted the two most important advances in the surgery of fibro-myomata within recent years. He contended that his technique was so simple as to admit of no further improvement of any importance and so sure as to almost entirely suppress every risk of the operation; that it was applicable, with slight modifications of detail, to every case without exception; and that it was within the reach of all surgeons. Dr. Doyen then passed under brief review the various historical steps in the evolution of hysterectomy.

I. *Vaginal Operations.*—(1) Removal of pedunculated fibroids (fibroid polypi); and (2) enucleation of interstitial myomata. Both these procedures were briefly described; in either case a large myoma was treated with morcellement prior to removal Dr. Doyen pointed out that in the case of enucleation the chief danger to be guarded against was perforation of the uterus. (3) Vaginal hysterectomy. Dr. Doyen's procedure was described as taking place in the following stages. First stage: incision of the posterior fornix, opening of Douglas's pouch, and exploration of the pelvic cavity. Second stage: incision of the anterior fornix and separation of the bladder. Third stage: crushing of the lower and middle parts of the broad ligaments. For this purpose the *écraseur* was applied on each side for from 15 to 20 seconds. The uterus could then be easily drawn down. Fourth stage: anterior hemisection of the uterus, either by median or by V-shaped incision, and drawing down of the uterine fundus. For a small uterus the median incision sufficed to allow the fundus and the adnexa to be brought down; for a larger tumour the V-shaped incision was employed. Fifth stage: application of a pressure forceps on each broad ligament and separation of the uterus. Sixth stage: crushing of the upper border of the broad ligament and application of ligatures. After the application of the *écraseur* for from 15 to 20 seconds above the pressure forceps a silk thread was tied in the groove formed by the *écraseur*. The use of the instrument ensured that the pedicle was relatively thin. As the threads were gradually tightened the assistant cautiously removed the pressure forceps. A single thread thus embraced each broad ligament. Seventh stage: peritoneal toilette, coaptation of the peritoneal flaps, and tamponnade of the vagina. The modifications necessitated by various complications were described in detail.

II. *Abdominal Operations.*—The operation of choice was total abdominal hysterectomy, with subserous enucleation (*décortication*) of the inferior segment of the uterus. This comprised the following stages. First stage : abdominal incision and raising of the tumour out of the pelvis. Second stage : when Douglas's pouch was free an assistant caused to project under the peritoneum a long curved forceps, placed in the vagina before the operation, and cutting down on this the vagina was opened : the cervix was seized and drawn backwards and upwards. Third stage : the cervix was separated from the bladder by opening the anterior vaginal fornix from the vaginal side. Fourth stage : the right broad ligament was seized with forceps and divided on its uterine side : the tumour was then turned over and the left broad ligament was treated in a similar fashion. Fifth stage : hæmostasis. The pedicles of the adnexa were crushed, tied, and divided. The uterine arteries were also tied and the forceps were removed. As a rule no other ligatures were required. Sixth stage : a purse-string suture was carried from the retro-uterine peritoneum across the peritoneum of the right adnexa to the peritoneum between the right adnexa and the bladder. When this was tied it threw the stump of the right adnexa below the peritoneum. A similar suture shut off the stump of the left adnexa. A continuous suture carried from one side to the other approximated the retro-uterine peritoneum to that of the bladder. Seventh stage : the peritoneal cavity was dried with sterilised gauze compresses and the abdominal wound was closed in two layers, silk for the peritoneum and fascia, and horsehair for the skin.—*From Report of the Gynæcological Congress*, *British Journal of Gynæcology*, *August*, 1899.

# Notes on New Preparations.

**Burroughs Wellcome & Co.**--We have received the following notes upon the new preparations which have been recently introduced by this enterprising and reliable firm:—

*Guaiacol Camphorate.*—This new drug—a result of original work in the Wellcome Chemical Research Laboratories—is an acid salt of Guaiacol and Camphoric Acid, both of which have been used independently with favourable results in phthisis—the former for its general action in improving the nutrition of the patient, the latter for its power of lessening or arresting night sweats. Inferentially, therefore, the chemical combination of these two therapeutic agents should be extremely useful in the treatment of consumption, and on theoretical grounds alone would appear to justify a trial. A series of clinical trials by a responsible authority justify the view that the combination is better borne than other preparations of guaiacol, and also that it is an effective therapeutic agent. One of its advantages over other guaiacol salts is that the camphorate is soluble in dilute alkaline solutions, and therefore readily absorbed in the intestines, whereas the compounds hitherto prescribed are sparingly soluble in dilute alkalis and accumulate in the intestines. The dose is 5 to 10 grs. in, or with, water, twice or thrice daily, after food. The dose may be gradually increased until 30 grs. three times daily are taken. The drug is supplied in powder or as a 5-gr. "Tabloid" product.

*"Soloid" Brand Indicators for Chemical Testing.*—The issue of "Soloid" preparations for water analysis and for preparing stains for microscopy has been followed by a further interesting

development. The frequent need for some substance capable of indicating the end of a chemical reaction such as the exact point of neutralisation of an acid or an alkali has led to the introduction of a series of useful "Soloid" Indicators. By this means small amounts of a solution of any indicator, of the proper quality and strength, may be quickly prepared as required, and the need of keeping bulky and unstable solutions is avoided. The list already includes "Soloid" Indigo-Carmine, "Soloid" Lacmoid, "Soloid" Methyl-Orange, "Soloid" Phenolphthalein, "Soloid" Rosolic Acid, and "Soloid" Starch.

*"Tabloid" Brand Products.*—In addition to "Tabloid" Guaiacol Camphorate the following new "Tabloid" preparations may be noted.

*"Tabloid" Guaiacum Resin, gr.* 5, permits of the administration of this drug in a practically tasteless form.

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**ERRATUM.**—The Editors desire to notify that Dr. Marsh's article on Plague in Vol. CXIX. was originally published in the *Glasgow Medical Journal*, and not in the periodical to which acknowledgment was made.

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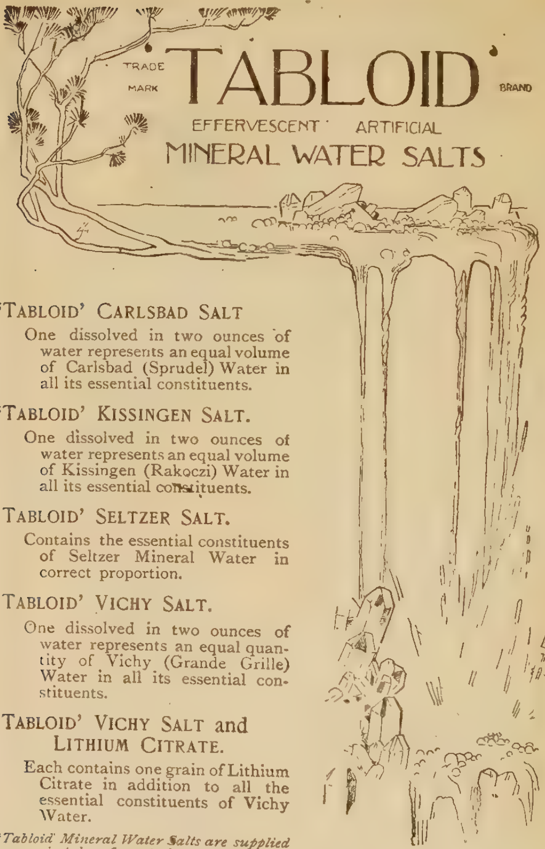

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